THE FAUNA OF BRITISH INDIA,

INCLUDING

CEYLON AND BURMA.

Published under the authority of the Secretary of State for India in Council.

EDITED BY SIR ARTHUR E. SHIPLEY, G.B.E., M.A., Sc.D.Cantab., HON. D.Sc. Princeton, HON. LL.D. Michigan, F.R.S.

59 82 (54)

BIRDS.—VOL. I.

(Second Edition.)

BY

E. C. STUART BAKER, O.B.E., F.Z.S., Etc.

LONDON:
TAYLOR AND FRANCIS, RED LION COURT, FLEET STREET.

CALCUTTA: THACKER, SPINK, & CO. | BOMBAY: THACKER & CO., LIMITED.

July, 1922.

22.89676

ALERE FLAMMAM.

PRINTED BY TAYLOR AND FRANCIS,

RED LION COURT, FLEET STREET.

PREFACE.

The first volume by Mr. Oates on the Birds of British India was published in 1889 under the editorship of Dr. W. T. Blanford and it was then estimated that in this and the three succeeding volumes the number of species dealt with would exceed those enumerated in Jerdon's classical "Birds of India" by more than one half. Mr. Oates had been able to come to England on furlough and was thus able to utilize the collection of Indian birds in the British Museum, which included amongst other large collections Mr. Hume's collection of 60,000 skins. The second of the volumes written by Mr. Oates appeared the following year but as he was unable to obtain an extension of his two years' furlough he had to be content with issuing a somewhat smaller volume than usual. Still, he succeeded in covering the whole of the Passerine birds, the largest and most difficult of all the great orders.

The two remaining volumes on Birds were written by Dr. W. T. Blanford and published respectively in 1895 and 1898.

These volumes on Birds have been for many years out of print, and there has been a constant demand for a re-issue of them. It is therefore with great pleasure that with the sanction of the authorities of the India Office I have been able to secure the services of Mr. E. C. Stuart Baker in preparing this much needed new edition.

Dr. Blanford died in 1905. For twenty-seven years he had been a member of the Indian Geological Society and had acquired a wide and deep knowledge of the geology of that great Empire. But he was a man of the utmost width of scientific interest. During his many journeys he kept a keen eye on the fauna of British India and it was this first-hand knowledge that enabled him so successfully to complete the great work begun by Mr. Oates. Dr. Blanford was an indefatigable worker and everything that he wrote was of the highest order of merit, marked by thoroughness and accuracy.

Mr. Oates survived his editor by six years. He had spent thirty-two years in the Public Works Department of India and had devoted all his spare time to the ornithology of British India. He was chiefly stationed in Burma and was undoubtedly the world's authority on the birds of that country. His "Birds of British Burma" in two volumes is still a standard work, though it has perhaps been to some extent replaced by his later work in "The Fauna of British India."

He is described by those who knew him as being a lovable but at times hot-tempered man ; but officials who have spent a large part of their lives in the tropics are apt to be a little hot-tempered. The fact that Mr. A. O. Hume made over to Oates the whole of his notes and correspondence when the latter was preparing his work on "The Nests and Eggs of Indian Birds" testifies to the high regard he inspired in his contemporaries. On his retirement he was requested by the Trustees of the British Museum to catalogue their large collection of British eggs, and he prepared a manuscript of four volumes, covering about 50,000 specimens. The first two volumes of this catalogue were issued during his lifetime.

Both he and Dr. Blanford are splendid examples of men carrying on thorough scientific work in the rare and sporadic intervals of exacting, official duties.

Those who are responsible for issuing these volumes may well congratulate themselves on having secured the services of Mr. E. C. Stuart Baker. Mr. Baker is well known to all those in India who take an interest in ornithology and big game shooting. He is equally known to Ornithologists all over the world as a regular contributor for more than thirty years to the "Ibis" and "Bombay Natural History Society's Journal." His volumes on Indian Game Birds are standard works and all who read these pages will recognise in his vivid descriptions of the habits and song of birds the work of a first-hand authority.

The author has produced a work which combines the highest scientific standard with a system which readily enables the sportsman or amateur to identify the various birds of British India. He has himself drawn attention to the imperative need of the trinominal system of nomenclature and he has modernised the generic and specific names in accordance with the rules of the International Congress.

In some cases it will be noticed that there is no name following the words "vernacular names." In these cases none have been recorded, but it is hoped that sportsmen and naturalists in India may in time be able to fill up these blanks. The extremely accurate and living drawings for the plates are the work of the author. They have been admirably reproduced by Messrs. Bale & Danielsson.

7th July, 1922. A. E. SHIPLEY.

SYSTEMATIC INDEX.

Page

Order I. PASSERES 10

I. Family Corvidæ 18

1. Genus Corvus *Linn.* 20

1. corax *Linn.* 21

1. corax laurencei (*Hume*) 21

2. corax tibetanus (*Hodgs.*) 23

3. corax ruficollis (*Lesson*) 23

2. corone *Linn.* 24

4. corone orientalis (*Eversm.*) 24

3. coronoides *Gould* 25

5. coronoides levaillanti (*Less.*) 27

6. coronoides culminatus (*Sykes*) 28

7. coronoides intermedius (*Adams*) 28

8. coronoides andamanensis (*Tytler*) 29

4. frugilegus *Linn.* 30

9. frugilegus tschusii *Hartert* 30

5. cornix *Linn.* 32

10. cornix sharpii (*Oates*) 32

6. splendens *Vieill.* 32

11. splendens splendens (*Vieill.*) 33

12. splendens zugmayeri (*Laubm.*) 34

13. splendens isolens (*Hume*) 34

14. splendens protegatus *Madar.* 35

7. monedula *Linn.* 36

15. monedula sœmmeringii (*Fischer*)........ 36

2. Genus Pica *Brisson* 37

8. pica (*Linn.*) 38

16. pica bactriana *Bonap.* 38

17. pica serica (*Gould*) 39

18. pica bottanensis (*Delessert*) 39

3. Genus Urocissa *Cabanis* 40

9. melanocephala (*Lath.*) 40

19. melanocephala melanocephala (*Lath.*).... 41

20. melanocephala occipitalis (*Blyth*) 41

21. melanocephala magnirostris (*Blyth*) 42

10. flavirostris (*Blyth*) 43

22. flavirostris flavirostris (*Blyth*).......... 43

23. flavirostris cucullata (*Gould*) 44

I. Family Corvidæ (*cont.*). Page
4. Genus Cissa *Boie* 45
11. chinensis (*Bodd.*) 45
24. chinensis chinensis (*Bodd.*) 45
12. ornata (*Wagler*) 46
5. Genus Dendrocitta *Gould* 47
13. rufa (*Latham*) 48
25. rufa rufa (*Latham*) 48
26. rufa vagabunda (*Latham*) 50
27. rufa sclateri, subsp. nov. 50
28. rufa kinneari, subsp. nov. 51
29. rufa saturatior (*Ticehurst*) 51
14. leucogastra *Gould* 51
15. sinensis (*Lath.*) 52
30. sinensis himalayensis (*Blyth*) 52
31. sinensis assimilis (*Hume*) 53
16. frontalis *McClell.* 54
17. bayleyi *Tytler* 55
6. Genus Crypsirhina *Vieill.* 56
18. varians (*Latham*) 56
19. cucullata *Jerdon* 57
7. Genus Platysmurus *Reich.* 58
20. leucopterus (*Temm.*) 58
8. Genus Garrulus *Briss.* 59
21. lanceolatus *Vigors* 60
22. leucotis *Hume* 61
32. leucotis leucotis (*Hume*) 61
33. leucotis oatesi (*Sharpe*) 62
23. bispecularis *Vigors* 63
34. bispecularis bispecularis (*Vigors*) 63
35. bispecularis interstinctus *Hartert* 64
36. bispecularis persaturatus *Hartert* 65
37. bispecularis haringtoni (*Rippon*) 65
9. Genus Nucifraga *Briss.* 66
24. caryocatactes *Linn.* 66
38. caryocatactes hemispila (*Vigors*) 66
25. multipunctata *Gould* 67
10. Genus Pyrrhocorax *Vieill.* 68
26. pyrrhocorax (*Linn.*) 68
27. graculus (*Linn.*) 70
11. Genus Podoces *Fischer* 71
28. humilis *Hume* 71

II. Family Paridæ 72
12. Genus Parus *Linn.* 73
29. major *Linn.* 73
39. major cinereus (*Vieill.*) 74
40. major intermedius (*Sarudny*) 76
41. major kaschmiriensis *Hartert* 76

II. Family PARIDÆ (*cont.*).
12. Genus Parus (*cont.*). Page
42. major planorum *Hartert* 77
43. major mahrattarum *Hartert* 77
44. major tibetanus *Hartert* 78
45. major commixtus (*Swinhoe*)............ 78
30. nuchalis *Jerdon* 79
31. monticolus *Vigors* 80
46. monticolus monticolus (*Vigors*) 80
32. cyanus *Pallas* 81
47. cyanus tianschanicus *Menzbier* 81
33. palustris *Linn.* 82
48. palustris korejewi (*Zarud. & Härms*) 82
49. palustris pœcilopsis (*Sharpe*) 82
13. Genus Lophophanes *Kaup* 83
34. melanolophus (*Vigors*). 83
35. ater (*Linn.*) 84
50. ater æmodius (*Hodgs.*)................. 84
36. rubidiventris (*Blyth*) 84
37. rufonuchalis (*Blyth*)...................... 85
51. rufonuchalis rufonuchalis (*Blyth*) 85
52. rufonuchalis beavani (*Blyth*) 86
38. dichrous (*Hodgs.*)......................... 86
53. dichrous dichrous (*Hodgs.*) 87
54. dichrous wellsi *Stuart Baker* 87
14. Genus Sylviparus *Burton*.................. 88
39. modestus *Burton* 88
55. modestus modestus (*Burton*) 88
56. modestus simlaensis *Stuart Baker* 88
57. modestus saturatior (*Rippon*) 89
15. Genus Machlolophus *Cabanis* 89
40. spilonotus (*Blyth*) 89
58. spilonotus spilonotus (*Blyth*) 89
59. spilonotus subviridis (*Tickell*).......... 91
41. xanthogenys (*Vigors*) 91
60. xanthogenys xanthogenys (*Vigors*)...... 91
61. xanthogenys aplonotus (*Blyth*) 92
16. Genus Ægithaliscus *Cabanis* 93
42. concinnus *Gould* 93
62. concinnus iredalei *Stuart Baker* 93
63. concinnus manipurensis (*Hume*) 94
64. concinnus pulchellus (*Rippon*).......... 95
65. concinnus talifuensis (*Rippon*) 95
43. bonvaloti *Oustalet*......................... 96
66. bonvaloti bonvaloti (*Oustalet*) 96
67. bonvaloti sharpei (*Rippon*) 97
44. leucogenys (*Moore*) 97
45. niveogularis (*Moore*) 98
46. ioschistos (*Hodgs.*) 99

II. Family PARIDÆ (*cont.*). Page
17. Genus Remiz *Stejn.* 100
47. coronatus (*Severtz.*) 100
18. Genus Melanochlora *Lesson* 101
48. sultanea (*Hodgs.*) 101
68. sultanea sultanea (*Hodgs.*) 101
69. sultanea flavocristata (*Lafres.*) 102

III. Family PARADOXORNITHIDÆ 103
19. Genus Conostoma *Hodgs.* 103
49. æmodium *Hodgs.* 104
20. Genus Paradoxornis *Gould* 105
50. flavirostris *Gould* 105
51. guttaticollis *David* 106
21. Genus Suthora *Hodgs.* 107
52. unicolor (*Hodgs.*) 108
53. nepalensis *Hodgs.* 109
54. poliotis *Blyth* 109
70. poliotis poliotis (*Blyth*) 109
71. poliotis humii (*Sharpe*) 110
72. paliotis feæ (*Salvadori*) 111
73. poliotis ripponi (*Sharpe*) 111
55. gularis (*Horsf.*) 111
74. gularis craddocki (*Bingham*) 111
56. webbiana *Slater* 112
75. webbiana brunnea (*Anderson*) 112
57. fulvifrons *Hodgs.* 113
76. fulvifrons fulvifrons (*Hodgs.*) 113
58. ruficeps (*Blyth*) 114
77. ruficeps ruficeps (*Blyth*) 114
78. ruficeps atrosuperciliaris *Godw.-Aust.* 114
22. Genus Neosuthora *Hellmayr* 115
59. davidiana (*Gray*) 115
79. davidiana thompsoni (*Bingham*) 115
23. Genus Psittiparus *Hellmayr* 116
60. ruficeps (*Blyth*) 116
80. ruficeps ruficeps (*Blyth*) 116
81. ruficeps bakeri (*Hartert*) 117
61. gularis (*Gray*) 118
82. gularis gularis (*Gray*) 118
83. gularis transfluvialis (*Hartert*) 118

IV. Family SITTIDÆ 120
24. Genus Sitta *Linn.* 121
62. himalayensis *Jard. & Selby* 122
63. victoriæ *Rippon* 123
64. castaneiventris *Frank.* 123
84. castaneiventris castaneiventris (*Frank.*) .. 123

IV. Family SITTIDÆ (*cont.*).
24. Genus Sitta (*cont.*). Page
85. castaneiventris cinnamoventris (*Blyth*) .. 125
86. castaneiventris neglecta (*Wald.*)........ 126
65. europæa *Linn.* 127
87. europæa nagaensis (*Godw.-Aust.*) 127
66. kashmiriensis *Brooks* 128
67. magna *Wardl.-Ramsay* 128
68. neumayer *Michahelles* 129
88. neumayer tephronota (*Sharpe*) 129
69. leucopsis *Gould* 130
89. leucopsis leucopsis (*Gould*) 130
70. formosa *Blyth* 131
71. frontalis *Horsf.* 132
90. frontalis frontalis (*Horsf.*) 132

V. Family TIMALIIDÆ 134
Subfamily TIMALIINÆ 136
25. Genus Dryonastes *Sharpe* 138
72. ruficollis (*Jard. & Selby*) 139
73. nuchalis (*Godw.-Aust.*) 140
74. chinensis (*Scop.*) 141
91. chinensis leucogenys (*Blyth*) 141
75. cærulatus (*Hodgs.*) 141
92. cærulatus cærulatus (*Hodgs.*) 141
93. cærulatus subcærulatus (*Hume*) 142
94. cærulatus kaurensis (*Rippon*) 143
76. sannio (*Swinh.*) 144
77. galbanus (*Godw.-Aust.*) 145
26. Genus Garrulax *Lesson* 145
78. leucolophus (*Hardw.*) 146
95. leucolophus leucolophus (*Hardw.*) 146
96. leucolophus belangeri (*Less.*) 148
97. leucolophus diardi (*Less.*).............. 148
79. delesserti (*Jerd.*) 149
80. pectoralis (*Gould*) 150
98. pectoralis pectoralis (*Gould*) 150
99. pectoralis semitorquata (*Ogilvie-Grant*) .. 151
81. moniliger (*Hodgs.*) 151
100. moniliger moniliger (*Hodgs.*) 151
101. moniliger fuscata *Stuart Baker* 152
82. gularis (*McClell.*) 152
83. albogularis (*Gould*) 153
102. albogularis albogularis (*Gould*) 153
103. albogularis whistleri *Stuart Baker* 154
84. strepitans *Blyth* 154
27. Genus Ianthocincla *Gould* 155
85. ocellata (*Vigors*) 155
104. ocellata ocellata (*Vigors*) 155

V. Family Timaliidæ (*cont.*).
27. Genus Ianthocincla (*cont.*). Page
86. cineracea (*Godw.-Aust.*) 156
105. cineracea cineracea (*Godw.-Aust.*) 156
106. cineracea styani (*Oustalet*) 157
87. rufogularis *Gould* 158
107. rufogularis rufogularis (*Gould*) 158
108. rufogularis assamensis *Hartert* 159
109. rufogularis occidentalis *Hartert* 159
88. austeni (*Godw.-Aust.*) 160
110. austeni austeni (*Godw.-Aust.*) 160
111. austeni victoriæ (*Rippon*) 161
28. Genus Trochalopterum *Hodgs.* 161
89. erythrocephalum (*Vigors*) 162
112. erythrocephalum erythrocephalum (*Vigors*) 163
113. erythrocephalum erythrolæma (*Hume*) .. 164
114. erythrocephalum nigrimentum (*Oates*) .. 164
115. erythrocephalum godwini *Harington* 165
116. erythrocephalum woodi *Stuart Baker* 166
117. erythrocephalum chrysopterum (*Gould*) .. 166
118. erythrocephalum melanostigma (*Blyth*) .. 167
119. erythrocephalum ramsayi (*Ogilvie Grant*) 168
90. phœniceum (*Gould*) 168
120. phœniceum phœniceum (*Gould*) 168
121. phœniceem bakeri *Hartert* 169
122. phœniceum ripponi (*Oates*) 170
91. milnei *David* 170
123. milnei sharpei (*Rippon*) 170
92. subunicolor (*Hodgs.*) 171
124. subunicolor subunicolor (*Hodgs.*) 171
93. affine (*Hodgs.*) 172
125. affine affine (*Hodgs.*) 172
94. varigatum (*Vigors*) 173
126. variegatum variegatum (*Vigors*) 173
127. variegatum simile (*Hume*) 174
95. squamatum (*Gould*) 174
96. cachinnans *Jerd.* 176
128. cachinnans cinnamomeum *Davison* 177
97. jerdoni (*Blyth*) 177
129. jerdoni jerdoni (*Blyth*) 177
130. jerdoni fairbanki (*Blanf.*) 178
131. jerdoni meridionale (*Blanf.*) 178
98. virgatum *Godw.-Aust.* 179
99. lineatum (*Vigors*) 180
132. lineatum lineatum (*Vigors*) 180
133. lineatum griseicentior (*Hartert*) 181
134. lineatum gilgit (*Hartert*) 182
135. lineatum ziaratensis (*Ticehurst*) 182
136. lineatum imbricatum (*Blyth*) 183

V. Family Timaliidæ (*cont.*).
28. Genus Trochalopterum (*cont.*). Page
100. henrici *Oustalet* 183
29. Genus Grammatoptila *Reichenb.* 184
101. striata (*Vigors*) 184
137. striata striata (*Vigors*) 184
138. striata austeni (*Oates*) 185
30. Genus Stactocicha *Sharpe* 186
102. merulina (*Blyth*) 186
139. merulina merulina (*Blyth*) 186
31. Genus Babax *David* 187
103. lanceolatus (*Verr.*) 187
140. lanceolatus lanceolatus (*Verr.*) 187
141. lanceolatus victoriæ (*Rippon*) 188
104. waddelli *Dresser* 189
32. Genus Turdoides *Cretzschmar* 190
105. terricolor (*Hodgs.*) 191
142. terricolor terricolor (*Hodgs.*) 191
143. terricolor malabaricus (*Jerd.*) 192
144. terricolor sindianus *Ticehurst* 193
106. griseus (*Gmel.*) 193
145. griseus griseus (*Gmel.*) 193
146. griseus striatus (*Swains.*) 194
107. somervillei (*Sykes*) 194
108. rufescens (*Blyth*) 195
109. cinereifrons (*Blyth*) 196
33. Genus Argya *Lesson* 196
110. earlii (*Blyth*) 197
111. caudata (*Dumont*) 198
147. caudata caudata (*Dumont*) 198
148. caudata huttoni (*Blyth*) 199
112. gularis (*Blyth*) 199
113. malcolmi (*Sykes*) 200
114. subrufa (*Jerdon*) 201
115. longirostris (*Hodgs.*) 202
34. Genus Acanthoptila *Blyth* 203
116. nipalensis (*Hodgs.*) 204
35. Genus Pomatorhinus *Horsf.* 205
117. schisticeps *Hodgs.* 205
149. schisticeps schisticeps (*Hodgs.*) 206
150. schisticeps cryptanthus *Hartert* 207
151. schisticeps mearsi (*Ogilvie-Grant*) 207
152. schisticeps pinwilli (*Sharpe*) 208
118. nuchalis *Tweeddale* 208
119. olivaceus *Blyth* 209
153. olivaceus olivaceus (*Blyth*) 209
154. olivaceus ripponi (*Harington*) 210
120. horsfieldi *Sykes* 210
155. horsfieldi horsfieldi (*Sykes*) 210

V. Family TIMALIIDÆ (*cont.*).
35. Genus Pomatorhinus (*cont.*). Page
156. horsfieldi obscurus (*Hume*) 211
157. horsfieldi travancoriensis *Harington* 211
158. horsfieldi melanurus (*Blyth*) 212
121. ferruginosus *Blyth* 213
159. ferruginosus ferruginosus (*Blyth*) 213
160. ferruginosus phayrei (*Blyth*) 214
161. ferruginosus albigularis (*Blyth*) 215
162. ferruginosus mariæ (*Walden*) 215
122. ruficollis *Hodgs.* 216
163. ruficollis ruficollis (*Hodgs.*) 216
164. ruficollis bakeri *Harington* 217
123. ochraceiceps *Walden* 217
165. ochraceiceps ochraceiceps (*Walden*)...... 217
166. ochraceiceps austeni (*Hume*) 218
167. ochraceiceps stenorhynchus (*Blyth*) 219
124. erythrogenys *Vigors* 219
168. erythrogenys erythrogenys (*Vigors*) 220
169. erythrogenys haringtoni (*Stuart Baker*) 220
170. erythrogenys macclellandi (*Jerdon*)...... 221
171. erythrogenys gravivox (*David*) 221
172. erythrogenys imberbis (*Salvad.*) 222
125. hypoleucus *Blyth*.......................... 222
173. hypoleucus hypoleucus (*Blyth*) 222
174. hypoleucus tickelli (*Blyth*) 223
36. Genus Xiphiramphus *Blyth*..................... 224
126. superciliaris *Blyth* 224
37. Genus Timalia *Horsf.* 225
127. pileata *Horsf.* 225
175. pileata bengalensis (*Godw.-Aust.*) 226
176. pileata jerdoni (*Walden*) 227
38. Genus Dumetia *Blyth* 228
128. hyperythra (*Frankl.*) 228
129. albigularis (*Blyth*) 229
177. albigularis albigularis (*Blyth*) 229
178. albigularis abuensis *Harington* 230
39. Genus Gampsorhynchus *Blyth* 230
130. rufulus *Blyth* 231
179. rufulus rufulus (*Blyth*) 231
180. rufulus torquatus (*Hume*) 232
40. Genus Pyctorhis *Hodgs.* 233
131. sinensis (*Gmel.*) 233
181. sinensis sinensis (*Gmel.*) 233
182. sinensis saturatior *Ticehurst* 234
183. sinensis nasalis (*Legge*) 235
132. altirostris (*Jerd.*) 235
184. altirostris altirostris (*Jerd.*)............ 235
185. altirostris griseigularis (*Hume*) 236

V. Family TIMALIIDÆ (*cont.*).
40. Genus Pyctorhis (*cont.*). Page
186. altirostris scindicus *Harington* 237
41. Genus Pellorneum *Swainson* 237
133. ruficeps *Swains.* 238
187. ruficeps ruficeps (*Swains.*) 238
188. ruficeps subochraceum (*Swinh.*) 239
189. ruficeps granti *Harington* 240
190. ruficeps mandellii (*Blanf.*) 240
191. ruficeps jonesi *Stuart Baker* 241
192. ruficeps minus (*Hume*) 242
134. palustre *Jerdon* 242
135. ignotum *Hume* 243
193. ignotum ignotum (*Hume*) 243
194. ignotum cinnamomeum *Rippon* 244
136. fuscicapillum (*Blyth*) 245
195. fuscicapillum fuscicapillum (*Blyth*)...... 245
196. fuscicapillum babaulti (*Wells*).......... 245
137. nigricapitatum (*Eyton*).................... 246
138. tickelli (*Blyth*) 247
197. tickelli tickelli (*Blyth*)............... 247
198. tickelli assamensis (*Sharpe*) 248
42. Genus Cursonia *Skinner* 248
139. crispifrons (*Blyth*) 249
43. Genus Turdinulus *Hume* 250
140. brevicaudatus (*Blyth*) 251
199. brevicaudatus brevicaudatus (*Blyth*) 251
200. brevicaudatus striatus (*Blyth*).......... 251
201. brevicaudatus venningi *Harington* 252
141. roberti (*Godw.-Aust.*) 253
202. roberti roberti (*Godw.-Aust.*) 253
203. roberti guttaticollis (*Ogilvie-Grant*) 254
142. epilepidotus (*Ogilvie-Grant*)............... 254
204. epilepidotus davisoni (*Ogilvie-Grant*) 254
205. epilepidotus bakeri *Harington* 255
44. Genus Rimator *Blyth* 255
143. malacoptilus *Blyth* 255
45. Genus Horizillas *Oberholser*.................... 257
144. magna (*Eyton*)............................. 257
206. magna magna (*Eyton*) 257
145. magnirostre (*Moore*)......................... 258
46. Genus Erythrocichla *Sharpe* 258
146. bicolor (*Less.*) 258
47. Genus Æthostoma *Sharpe* 259
147. rostrata (*Blyth*) 259
48. Genus Malacocincla *Büttik*...................... 260
148. sepiaria (*Blyth*) 260
207. sepiaria abboti (*Blyth*)................. 260
49. Genus Thringorhina *Oates* 261

V. Family TIMALIIDÆ (*cont.*).
49. Genus Thringorhina (*cont.*). Page
149. oglei (*Godw.-Aust.*) 262
150. guttata (*Blyth*) 262
50. Genus Stachyris *Hodgs.* 263
151. nigriceps *Hodgs.* 264
208. nigriceps nigriceps (*Hodgs.*) 264
209. nigriceps coltarti *Harington* 265
210. nigriceps davisoni (*Sharpe*) 265
152. chrysæa *Blyth* 265
211. chrysæa chrysæa (*Blyth*) 265
212. chrysæa binghami (*Rippon*) 266
213. chrysæa assimilis (*Walden*) 267
214. chrysæa chrysops *Richmond* 267
51. Genus Stachyridopsis *Sharpe* 267
153. ruficeps *Blyth* 268
215. ruficeps ruficeps (*Blyth*) 268
216. ruficeps bhamoensis *Harington* 269
154. rufifrons (*Hume*) 269
217. rufifrons rufifrons (*Hume*) 269
218. rufifrons ambigua *Harington* 270
155. pyrrhops (*Blyth*) 271
52. Genus Cyanoderma *Salvadori* 271
156. erythroptera (*Blyth*) 271
219. erythroptera erythroptera (*Blyth*) 271
53. Genus Mixornis *Hodgs.* 272
157. rubricapilla *Tickell* 272
220. rubricapilla rubricapilla (*Tickell*) 273
221. rubricapilla minor (*Gyldenstolpe*) 274
222. rubricapilla pileata (*Blyth*) 274
54. Genus Alcippe *Blyth* 275
158. nepalensis (*Hodgs.*) 275
223. nepalensis nepalensis (*Hodgs.*) 275
224. nepalensis fratercula (*Rippon*) 277
159. poioicephala (*Jerd.*) 277
225. poioicephala poioicephala (*Jerd.*) 277
226. poioicephala brucei (*Hume*) 278
227. poioicephala phayrei (*Blyth*) 278
228. poioicephala davisoni (*Harington*) 279
229. poioicephala haringtoniæ (*Hartert*) 280
230. poioicephala magnirostris (*Walden*) 280
55. Genus Rhopocichla *Oates* 281
160. atriceps (*Jerdon*) 281
231. atriceps atriceps (*Oates*) 281
232. atriceps bourdilloni (*Hume*) 282
233. atriceps nigrifrons (*Blyth*) 282
56. Genus Schœniparus *Hume* 283
161. dubius (*Hume*) 283
234. dubius dubius (*Hume*) 283

V. Family TIMALIIDÆ (*cont.*).
56. Genus Schœniparus (*cont.*). Page
235. dubius mandelli (*Godw.-Aust.*) 284
236. dubius genestieri (*Oustalet*) 285
162. rufigularis (*Mandelli*) 286
57. Genus Pseudominla *Oates* 286
163. cinerea (*Blyth*)........................... 287
164. castaneiceps (*Hodgs.*) 288
237. castaneiceps castaneiceps (*Hodgs.*) 288
238. castaneiceps brunneicauda (*Sharpe*) ... 289
58. Genus Fulvetta *David & Oust.* 289
165. vinipecta (*Hodgs.*) 290
239. vinipecta vinipecta (*Hodgs.*) 290
240. vinipecta austeni (*O.-Grant*) 291
241. vinipecta ripponi (*Harington*) 291
166. manipurensis (*O.-Grant*) 292
167. ruficapilla (*Verreaux*) 292
242. ruficapilla sordidior (*Rippon*) 292
59. Genus Lioparus *Oates* 293
168. chrysotis (*Hodgs.*) 293
Subfamily SIBIINÆ 294
60. Genus Sibia *Hodgson* 295
169. picaoides *Hodgs.* 295
243. picaoides picaoides (*Hodgs.*) 295
61. Genus Leioptila *Blyth* 296
170. capistrata (*Vigors*) 296
244. capistrata capistrata (*Vigors*) 296
245. capistrata pallida *Hartert* 298
171. gracilis (*McClell.*)......................... 298
172. melanoleuca (*Tickell*) 299
246. melanoleuca melanoleuca (*Tickell*) 299
247. melanoleuca radcliffei, ? subsp. nov. ... 300
173. castanoptera (*Salvadori*) 300
174. annectens (*Blyth*)........................... 300
248. annectens annectens (*Blyth*) 300
249. annectens saturata (*Walden*) 301
250. annectens davisoni (*Hume*) 302
175. pulchella (*Godw.-Aust.*) 302
251. pulchella pulchella (*Godw.-Aust.*) 302
62. Genus Actinodura *Gould* 303
176. egertoni *Gould* 303
252. egertoni egertoni (*Gould*) 303
253. egertoni khasiana (*Godw.-Aust.*)........ 304
254. egertoni ripponi (*O.-Grant*)............ 305
177. ramsayi *Walden* 305
255. ramsayi ramsayi (*Walden*) 305
256. ramsayi radcliffei *Harington* 306
63. Genus Ixops *Hodgs.* 307
178. nipalensis (*Hodgs.*) 307

V. Family TIMALIIDÆ (*cont.*).
63. Genus Ixops (*cont.*). Page
257. nipalensis nipalensis (*Hodgs.*) 307
258. nipalensis waldeni (*Godw.-Aust.*) 308
259. nipalensis poliotis (*Rippon*) 309
260. nipalensis daflaensis (*Godw.-Aust.*) 309
64. Genus Staphidia *Swinhoe* 309
179. castaneiceps (*Moore*) 310
180. striata (*Blyth*) 311
261. striata striata (*Blyth*) 311
262. striata rufigenis (*Hume*) 311
65. Genus Siva *Hodgs.* 312
181. strigula *Hodgs.* 313
263. strigula strigula (*Hodgs.*) 313
264. strigula castaneicauda (*Hume*) 314
182. cyanouroptera *Hodgs.* 314
265. cyanouroptera cyanouroptera (*Hodgs.*) .. 314
266. cyanouroptera wingatei (*O.-Grant*) 315
267. cyanouroptera sordida (*Hume*) 316
268. cyanouroptera oatesi *Harington* 316
66. Genus Yuhina *Hodgs.* 316
183. gularis *Hodgs.* 317
269. gularis gularis (*Hodgs.*) 317
270. gularis yangpiensis (*Sharpe*) 318
184. diademata (*Verreaux*) 318
271. diademata ampelina (*Rippon*) 318
185. occipitalis *Hodgs.* 319
272. occipitalis occipitalis (*Hodgs.*) 319
186. nigrimentum (*Hodgs.*) 320
273. nigrimentum nigrimentum (*Hodgs.*) 320
67 Genus Ixulus *Hodgs.* 321
187. occipitalis (*Blyth*) 321
188. flavicollis (*Hodgs.*) 322
274. flavicollis flavicollis (*Hodgs.*) 322
275. flavicollis baileyi *Stuart Baker* 323
276. flavicollis harterti *Harington* 323
189. humilis *Hume* 324
277. humilis humilis (*Hume*) 324
278. humilis clarkii (*Oates*) 324
68. Genus Erpornis (*Hodgs.*) 324
190. xantholeuca *Hodgs.* 325
279. xantholeuca xantholeuca (*Hodgs.*) 325
Subfamily LIOTRICHINÆ 326
69. Genus Liothrix *Swains.* 327
191. lutea (*Scop.*) 327
280. lutea callipyga (*Hodgs.*) 328
281. lutea yunnanensis *Rothschild* 329
70. Genus Cutia *Hodgs.* 329
192. nipalensis *Hodgs.* 329

V. Family Timaliidæ (*cont.*).

	Page
70. Genus Cutia (*cont.*).	
282. nipalensis nipalensis (*Hodgs.*)	329
71. Genus Pteruthius *Swains.*	330
193. erythropterus (*Vigors*)	331
194. æralatus *Tickell*	333
283. æralatus æralatus (*Tickell*)	333
195. melanotis *Hodgs.*	333
284. melanotis melanotis (*Hodgs.*)	333
285. melanotis intermedius (*Hume*)	335
196. xanthochloris *Hodgs.*	335
286. xanthochloris xanthochloris (*Hodgs.*)	335
287. xanthochloris occidentalis *Harington*	336
72. Genus Hilarocichla *Oates*	336
197. rufiventer (*Blyth*)	337
73. Genus Aethorhynchus *Sundevall*	337
198. lafresnayi *Hartl.*	338
74. Genus Aegithina *Vieill.*	339
199. tiphia *Linn.*	339
288. tiphia tiphia (*Linn.*)	340
289. tiphia zeylonica (*Gmel.*)	342
290. tiphia humei, subsp. nov.	342
200. viridissima (*Bonap.*)	343
201. nigrolutea (*Marshall*)	344
75. Genus Myzornis *Hodgs.*	344
202. pyrrhoura *Hodgs.*	345
76. Genus Chloropsis *Jard. & Selby*	346
203. aurifrons (*Temm.*)	346
291. aurifrons aurifrons (*Temm.*)	346
292. aurifrons davidsoni *Stuart Baker*	348
293. aurifrons inornata *Kloss*	349
204. hardwickii *Jard. & Selby*	349
294. hardwickii hardwickii (*Jard. & Selby*)	349
205. icterocephala	350
295. icterocephala chlorocephala (*Wald.*)	350
206. viridis (*Horsfield*)	351
296. viridis zosterops (*Vigors*)	351
207. jerdoni (*Blyth*)	352
208. cyanopogon (*Temm.*)	353
77. Genus Mesia *Hodgs.*	353
209. argentauris *Hodgs.*	354
297. argentauris argentauris (*Hodgs.*)	354
78. Genus Minla *Hodgs.*	355
210. ignotincta *Hodgs.*	355
79. Genus Hypocolius *Bonap.*	356
211. ampelinus *Bonap.*	357

Page
VI. Family PYCNONOTIDÆ 359
80. Genus Criniger *Temm.* 361
212. tephrogenys (*Jard. & Selby*) 362
298. tephrogenys tephrogenys (*Jard. & Selby*) . 362
299. tephrogenys flaveolus (*Gould*) 363
300. tephrogenys burmanicus (*Oates*) 364
301. tephrogenys griseiceps (*Hume*) 365
302. tephrogenys grandis (*Stuart Baker*) 365
81. Genus Tricholestes *Salvadori* 366
213. criniger (*Blyth*) 366
303. criniger criniger (*Blyth*) 366
82. Genus Alophoixus *Oates* 367
214. phæocephalus *Hartl.* 368
83. Genus Microscelis *Gray* 368
215. psaroides (*Vigors*) 369
304. psaroides psaroides (*Vigors*) 369
305. psaroides nigrescens (*Stuart Baker*) 371
306. psaroides concolor (*Blyth*) 372
307. psaroides ganeesa (*Sykes*) 372
84. Genus Cerasophila *Bingham* 373
216. thompsoni *Bingham* 373
85. Genus Hemixus *Hodgs.* 374
217. flavala *Hodgs.* 374
308. flavala flavala (*Hodgs.*) 374
309. flavala davisoni (*Hume*) 376
310. flavala hildebrandi (*Hume*) 376
218. macclellandi (*Horsf.*) 377
311. macclellandi macclellandi (*Horsf.*) 377
312. macclellandi tickelli (*Blyth*) 378
313. macclellandi binghami (*Hartert*) 379
86. Genus Alcurus *Hodgs.* 379
219. striatus (*Blyth*) 379
87. Genus Molpastes *Hume* 381
220. hæmorrhous (*Gmel.*) 383
314. hæmorrhous hæmorrhous (*Gmel.*) 383
315. hæmorrhous pallidus *Stuart Baker* 385
316. hæmorrhous burmanicus (*Sharpe*) 385
317. hæmorrhous nigripileus (*Blyth*) 386
318. hæmorrhous chrysorrhoides (*Lafr.*) 387
319. hæmorrhous bengalensis (*Blyth*) 387
320. hæmorrhous intermedius (*Jerdon*) 389
221. leucogenys (*Gray*) 389
321. leucogenys leucogenys (*Gray*) 389
322. leucogenys leucotis (*Gould*) 390
323. leucogenys humii (*Oates*) 391
88. Genus Xanthixus *Oates* 392
222. flavescens (*Blyth*) 392
324. flavescens flavescens (*Blyth*) 392
325. flavescens viridus *Stuart Baker* 393

VI. Family Pycnonotidæ (*cont.*). Page
89. Genus Otocompsa *Cabanis* 394
223. emeria (*Linn.*) 394
326. emeria emeria (*Linn.*) 394
327. emeria fuscicaudata (*Gould*) 396
328. emeria peguensis, subsp. nov. 396
224. flaviventris (*Tick.*) 397
329. flaviventris flaviventris (*Tick.*) 397
330. flaviventris minor *Kloss* 398
90. Genus Pinarocichla *Sharpe* 399
225. eutilota (*Jard. & Selby*) 399
91. Genus Spizixus *Blyth* 400
226. canifrons *Blyth* 400
331. canifrons canifrons (*Blyth*) 400
92. Genus Trachycomus *Cabanis* 402
227. ochrocephalus (*Gmel.*) 402
93. Genus Iole *Blyth* 403
228. malaccensis (*Blyth*) 404
332. malaccensis malaccensis (*Blyth*) 404
229. icterica (*Strickl.*) 405
230. olivacea (*Blyth*) 405
333. olivacea virescens (*Blyth*) 406
334. olivacea cinnamomeoventris *Stuart Baker*. 407
335. olivacea lönbergi (*Gyldenstolpe*) 408
231. nicobariensis (*Horsf. & Moore*) 408
94. Genus Rubigula *Blyth* 409
232. squamata (*Temminck*) 409
336. squamata webberi (*Hume*) 409
95. Genus Pycnonotus *Kuhl* 410
233. goiavier (*Scop.*) 410
337. goiavier analis (*Horsf.*) 410
234. aurigaster (*Vieill.*) 411
338. aurigaster xanthorrhous (*Anderson*) 411
235. finlaysoni *Strickl.* 412
339. finlaysoni finlaysoni (*Strickl.*) 412
340. finlaysoni davisoni (*Hume*) 413
236. melanicterus (*Gmel.*) 414
237. xantholæmus (*Gould*) 415
238. gularis (*Gould*) 415
239. cyaniventris *Blyth* 416
341. cyaniventris cyaniventris (*Blyth*) 416
240. luteolus (*Less.*) 417
241. plumosus *Blyth* 418
342. plumosus plumosus (*Blyth*) 419
343. plumosus robinsoni (*O.-Grant*) 420
344. plumosus blandfordi (*Jerdon*) 420
242. simplex *Less.* 421
345. simplex simplex (*Less.*) 421

VI. Family Pycnonotidæ (*cont.*).
95. Genus Pycnonotus (*cont.*). Page
243. erythrophthalmus (*Hume*) 422
346. erythrophthalmus erythrophthalmus (*Hume*). 422
96. Genus Microtarsus *Eyton* 422
244. melanocephalus (*Gmel.*) 423
347. melanocephalus melanocephalus (*Gmel.*) .. 423
348. melanocephalus fusciflavescens (*Hume*) .. 425
245. poiocephalus (*Jerdon*) 425
246. cinereiventris (*Blyth*) 426
97. Genus Kelaartia (*Blyth*) 426
247. penicillata (*Blyth*) 427

VII. Family Certhiidæ 428
98. Genus Certhia *Linn.* 428
248. himalayana *Vigors* 429
349. himalayana himalayana (*Vigors*) 430
350. himalayana tænura (*Severtz.*) 431
351. himalayana yunnanensis (*Sharpe*) 432
352. himalayana intermedia *Kinnear* 432
249. familiaris *Linn.* 432
353. familiaris nepalensis (*Blyth*) 433
354. familiaris khamensis (*Bianchi*) 434
355. familiaris hodgsoni (*Brooks*) 434
250. discolor (*Blyth*) 435
356. discolor discolor (*Blyth*) 435
357. discolor manipurensis (*Hume*) 437
358. discolor victoriæ (*Rippon*) 437
359. discolor fuliginosa, subsp. nov. 438
251. stoliczkæ *Brooks* 438
99. Genus Salpornis *Gray* 439
252. spilonotus *Frank.* 439
100. Genus Tichodroma *Illiger* 441
253. muraria (*Linn.*) 441

VIII. Family Troglodytidæ 444
101. Genus Troglodytes *Vieill.* 444
254. troglodytes (*Linn.*) 445
360. troglodytes nipalensis (*Hodgs.*) 445
361. troglodytes talifuensis (*Sharpe*) 446
362. troglodytes neglectus (*Brooks*) 446
363. troglodytes tibetanus (*Walton*) 448
102. Genus Elachura *Oates* 448
255. formosa (*Walden*) 449
256. haplonota *Stuart Baker* 450
103. Genus Spelæornis *Sharpe* 451
257. longicaudatus (*Moore*) 451
364. longicaudatus longicaudatus (*Moore*) 452
365. longicaudatus chocolatinus (*Godw.-Aust.*). 453

VIII. Family Troglodytidæ (*cont.*).
103. Genus Spelæornis (*cont.*). Page
366. longicaudatus sinlumensis (*Harington*) .. 453
367. longicaudatus kauriensis (*Harington*) 454
368. longicaudatus reptatus (*Bingham*)........ 455
369. longicaudata oatesi (*Rippon*)............ 455
258. caudatus (*Blyth*) 456
104. Genus Pnoepyga *Hodgs.* 457
259. squamata (*Gould*) 458
370. squamata squamata (*Gould*) 458
260. pusilla *Hodgs.* 459
371. pusilla pusilla *Hodgs.*.................. 459
105. Genus Sphenocichla *Godwin-Austen & Walden* 460
261. humei (*Mandelli*)............ 461
262. roberti *Godw.-Austen & Walden* 461
106. Genus Tesia *Hodgs.*.......................... 462
263. cyaniventer *Hodgs.* 463
372. cyaniventer cyaniventer (*Hodgs.*)........ 463
264. castaneocoronata (*Burton*) 465
373. castaneocoronata castaneocoronata (*Burton*) 465

INTRODUCTION.

The present volume is the first of the series of the new edition of the 'Avifauna of British India,' and, funds permitting, it is proposed to bring out about one volume every two years until the work is completed.

It has been my endeavour in writing this volume to disturb as little as possible the classification adopted by Oates in the first edition but during the thirty-two years that have elapsed since his first volume was published, much scientific work has been done and many discoveries made which have rendered alterations imperative; some of these, unfortunately, are of a drastic nature.

In the first place, the trinomial system has been adopted—a decision which has added very greatly to the number of birds to be described, *i.e.* to the total number of species and subspecies, though, on the other hand, it has reduced the number of species, for it has relegated to their proper positions as subspecies or geographical races many forms which have hitherto improperly held the status of species.

In using the trinomial system I have adhered to the following rules:—

Forms, or groups of forms, have been named as specific when there are no forms known which directly connect them with other forms or groups of forms.

Subspecies or geographical forms have been recognized when they differ in degree either in size, colour or some other characteristic from the forms with which they are most closely connected, yet, though linked with these forms by others which are intermediate, are themselves constant within some given area.

It is true that a few island forms may not come very exactly under this definition, but in these cases the differences are such as are obviously parallel to those obtaining in non-isolated areas on the mainland. Where evolution and isolation have evolved forms which are definitely divided from all others by some characteristic which is not one merely of degree, I have treated them as distinct species.

In India we are constantly meeting with the most intricate cases of subspecific variation, and a study of birds which admits the recognition of these geographical races and the wisdom of naming them affords infinitely greater interest both to the field and to the scientific worker than does the easier method of lumping them all together. For instance, to take two of our most common birds, the Indian House-Crow and the Red-vented Bulbul. Two species of the former and many of the latter have been recognized and given specific names, although the differences between them are in no way specific and are not any greater than the differences which exist in many other forms which have been left undivided.

The second point to which reference must be made is the unfortunate necessity which has arisen for very numerous corrections in Oates' nomenclature. Such corrections cannot but be a source of some difficulty to the older race of field naturalists, and students who have learnt these names will now have to learn those which replace them. The younger generation will, however, have the satisfaction of knowing that they are learning names which, with few exceptions, will be permanent; for, with strict adherence to the laws of priority, a time will soon come when we shall really have arrived at the bed-rock of nomenclatorial research. It should be mentioned here that I have had the unstinted help of Mr. Tom Iredale in this particular branch of the work, and his unrivalled knowledge of bibliography and nomenclature has been of inestimable help to me.

Another difference between this and the preceding edition will also be noted. With the approval of the editor, Sir Arthur E. Shipley, the synonymy has been reduced to references to the original description and to the Blanford and Oates' edition of this work, in the former case the type-locality being given in brackets after the reference. The saving of space thus obtained and the use of briefer descriptions has given additional room for

field notes, which it is hoped will add to the value of the work both for field naturalists and the non-scientific lover of birds, for whom they are principally written.

As regards the classification, this is founded mainly on Gadow's work, but I have also had the valuable assistance of W. P. Pycraft, and the results of his personal work will be found in almost every order, family and genus. I must, however, take upon my own shoulders any criticisms which may be made on the minor divisions in the Passeres, though, here again, my constant object has been to disturb as little as possible the careful work of Blanford and Oates.

Ornithological work in India has hitherto been divisible into very definite periods. The first period was that prior to the publication of Jerdon's 'Birds of India' in 1862 and the subsequent eight or ten years when the leading figures were Jerdon himself, Hodgson and Blyth, who may be considered the fathers of Indian Ornithology.

An account of the chief writers on Indian birds up to 1862 was given by Jerdon in the Introduction to the first volume of the 'Birds of India.' The principal authors mentioned were Franklin, Tickell, Sykes, McClelland, Burgess, Adams, Tytler, Kelaart, Layard and Hutton, in addition to the three already mentioned.

The next period, from about 1872 to 1898, may be termed Hume's period, the other most notable workers being Tweeddale, Wardlaw-Ramsay, Biddulph, Anderson, Elwes, Beavan, Scully, Sharpe, Stoliczka, Godwin-Austen, Brooks, Ball, King, Vidal, McMaster, Blanford, Legge, Oates and Barnes, with many other minor writers.

The third period is that of Blanford and Oates, both leading Ornithologists in the preceding period but completely dominating the position on the publication of the 'Avifauna of British India.' Since these volumes saw the light no big work has been published on Indian birds but Harington's 'Birds of Burma,' Oates' 'Game-Birds of India,' many popular works by Dewar, Finn and others, and the present writer's different works on Indian Ducks, Pigeons and Game-Birds have appeared. In addition to these the 'Journal of the Bombay Natural History Society' contains a mass of details on field ornithology by Harington, Osmaston, Davidson, Bell, Barnes, Inglis, Bailey, Whistler, Jones, Hopwood,

Mackenzie, Ticehurst, Donald and others. There are many local catalogues, and, finally, Harington's work on the *Timaliidæ*, in which the writer had the pleasure of co-operating.

Anatomy has not been treated at the length it deserves, but those who intend to take up this much neglected but most important branch of ornithology should refer to the well-known works of Dr. Hans Gadow, Huxley, Garrod, Bronn, Fürbringer, Forbes, Nitzsch and Parker, and to the more recent writers such as Pycraft, Beddard and Lucas.

The would-be Ornithologist in India must also remember that it is not only the dry skins of birds which are required by the systematist who, though he may have the good fortune to work in big museums and other centres where masses of material are available for comparison and where good libraries are at hand for reference, yet urgently needs specimens, especially of the rarer forms in spirit, not only for anatomical purposes but for the study of Pterylosis etc. Again, poor skins of moulting birds are often more valuable than those in the finest condition of plumage, while the nestlings and young of many of the most common birds are still desiderata in the British Museum and other institutions.

As regards nidification, it will be seen that I have devoted considerable space and detail to this portion of a bird's life-history. It is true that birds cannot be classified according to the eggs they produce, but at the same time it is equally true that a bird's egg may be a valuable clue to show us where we should expect to find its nearest allies or, on the other hand, may cause us to suspect that it should be removed from amongst those with which it is now placed.

E. C. STUART BAKER.

4th February, 1922.

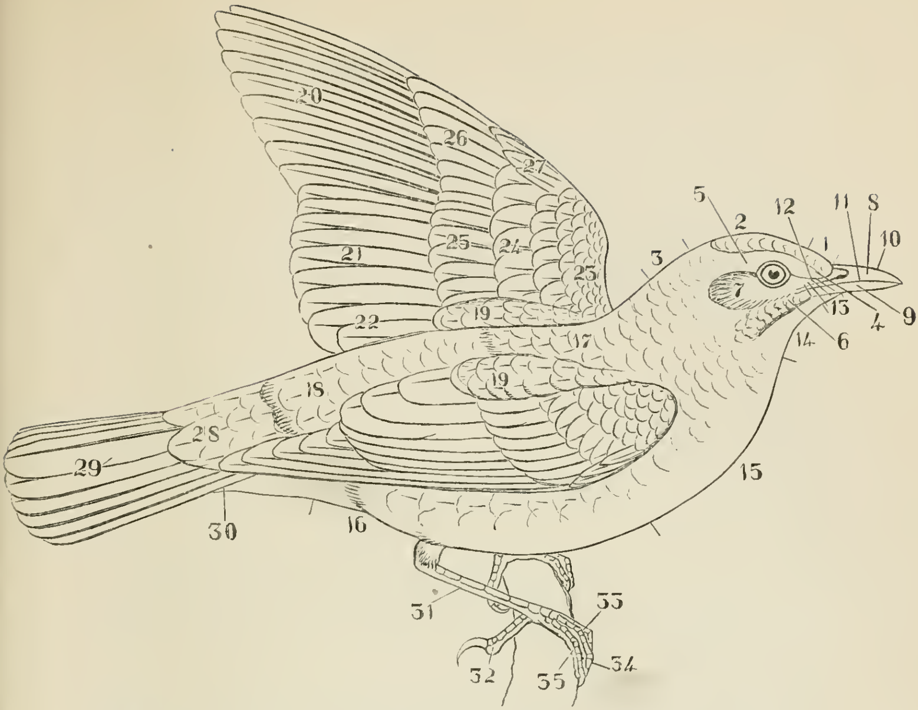


Diagram of a Bird, to illustrate the terminology of the plumage and limbs.

1. Forehead.
2. Crown.
3. Nape or occiput.
4. Lores (space in front of eye).
5. Supercilium.
6. Cheeks.
7. Ear-coverts.
8. Upper mandible or maxilla.
9. Lower mandible.
10. Culmen or upper profile of maxilla.
11. Commissure or line of junction of the two mandibles.
12. Rictal bristles or vibrissæ.
13. Chin.
14. Throat.
15. Breast.
16. Abdomen.
17. Back.
18. Rump.
19. Scapulars.
20. Primaries (the earlier or outermost 9 or 10 quills of the wing).
21. Outer secondaries (wing-quills springing from the radius and ulna).
22. Inner secondaries.
23. Lesser wing-coverts.
24. Median wing-coverts.
25. Greater wing-coverts.
26. Primary wing-coverts.
27. Winglet or bastard-wing.
28. Upper tail-coverts.
29. Tail-feathers or rectrices.
30. Under tail-coverts.
31. Tarsus.
32. Hind toe or first toe or hallux.
33. Inner or second toe.
34. Middle or third toe.
35. Outer or fourth toe.

Flanks or sides of body are the parts approximately covered by the closed wing.

Axillaries are the lengthened feathers springing from the axilla or region beneath the base of the wing.

Supplementary bristles or hairs are those springing from the side of the forehead in front of the rictal bristles.

Nasal bristles or hairs are those springing from the front of the forehead and covering the nostrils.

The measurements in this work are invariably in millimetres, and are taken thus:—

Length.—The distance from the tip of the bill to the tip of the longest tail-feather, unless otherwise stated.

Tail.—The distance from the root of the tail, generally indicated both in the fresh and dried state by the presence of a piece of flesh on the underside, to the tip of the longest feather.

Wing.—The greatest distance from the bend of the wing to the tip of the longest primary, measured straight. When the wing is curved, it is flattened out for the purpose of measurement.

Tarsus.—The distance from the centre of articulation of the tarsus with the tibia to the base of the middle toe.

Culmen.—The distance in a straight line from the feathering of the forehead to the extreme tip of the beak.

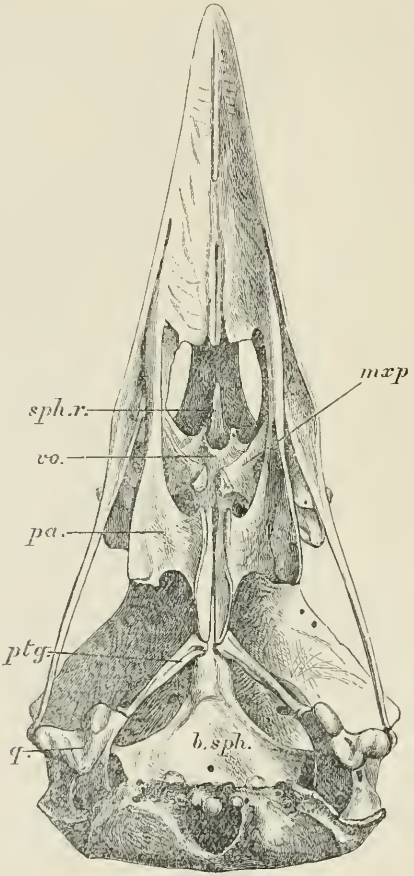
AVES.

Birds are distinguished from all other vertebrates by their covering of feathers. Though related to the Reptiles, they differ in being warm-blooded—a feature which is correlated with a four-chambered heart, in which the chambers are completely separated, thus preventing the intermixture of arterial and venous blood which obtains among the lower vertebrates. Of the right and left aortic arches present in the Reptiles, only the right persists in Birds and the left in Mammals. The skull, which presents no sutures in the adult, possesses but a single occipital condyle and the jaws are produced into a beak ensheathed in horn, whilst in more primitive, extinct species, they were armed with teeth. The lower jaw is a complex of several bones, but the right and left rami are never separable as in Reptiles and many Mammals. Proximally the mandible articulates with the skull, after the reptilian fashion, by means of a quadrate bone. The fore-limb has become transformed into a "wing," and the sternum, in accordance with the requirements of flight, has taken on the form of a broad, oblong plate, usually provided with a median keel for the attachment of the pectoral muscles, which have become excessively developed. In the hip-girdle the three elements of the pelvis have become fused. The ilium has become greatly elongated, and is closely applied to the vertebral column, preventing all movement between the vertebræ within its grip. As a consequence, these vertebræ, which include more or fewer of the lumbar, the sacral and a variable number of post-sacrals, have become welded together to form a synsacrum. In the hind-limb the proximal row of tarsals have become fused with the shaft of the tibia to form a "tibio-tarsus," while the distal row have fused with the metatarsals to form a tarso-metatarsus. On this account the ankle-joint is "intertarsal" as in many reptiles. Three of the four surviving metatarsals have fused to form a solid, cylindrical shaft or "cannon-bone" as in Dinosaurs, while the fourth has become reduced to a mere nodule of bone supporting the hallux. In many species the hallux has become reduced to a mere vestige, and, in some, it has disappeared altogether, whilst in the Ostrich (*Struthio*) but two toes remain. With the reptiles on the one hand, and the primitive mammals *Echidna* and *Ornithorhynchus* on the other, birds agree in being oviparous.

Hitherto most systems of classification have been founded on living birds only, and have therefore to some extent failed in their purpose. Birds have been commonly divided into two great groups or sub-classes, *Ratitæ* and *Carinatæ*, according to the

presence or absence of a median keel to the sternum. But these groups, though accepted by Blanford and Oates, are very unsatisfactory, since in some flightless *Carinatæ* the sternum has become reduced to the Ratite condition.

Taking into consideration birds both living and extinct, we have two well-defined sub-classes, the *Archæornithes* and *Neornithes*.



Under view of the skull of a Raven. *vo*, vomer; *mxp*, maxillo-palatine process; *pa*, palatine; *ptg*, pterygoid; *q*, quadrate; *b.sph*, basi-sphenoid; *sph.r*, sphenoidal rostrum.

The first is reserved for the *Archæopteryx* with an elongated reptilian chain of caudal vertebræ, each bearing a pair of rectrices and having the jaws armed with teeth. The sub-class *Neornithes*

ncludes all living birds in which the vertebræ supporting the rectrices have become so abbreviated that the tail-feathers have to be arranged fan-wise on either side of a fused mass of bones known as the "pygostyle."

As regards the *Neornithes*, the palate affords a much more satisfactory basis of division than the sternum. According to this, living birds are divisible into two further groups, the *Palæognathæ* and *Neognathæ*, the former in substitution for the *Ratitæ* and the latter for the *Carinatæ*.

In the *Palæognathæ* the vomer is large, and articulates by squamous suture with the pterygoid, while the palatine is applied to the outer margin of the vomero-pterygoid articulation.

In the *Neognathæ* the palatines have shifted inwards, under the vomero-pterygoid articulation, to meet one another in the median line. The pterygoids, in early post-embryonic life, undergo a striking process of segmentation, inasmuch as that portion of their shafts which rests upon the proximal end of the palatine snaps off, as it were from the main shaft, and fuses with the palatine. Later, at the point of fracture a cup-and-ball joint is formed, affording the strongest possible contrast with the squamous suture found in the *Palæognathæ*.

Where the vomer still retains some semblance of its former size, its proximal bifurcated end may just reach the extreme tip of the anterior end of the pterygoid, but it now depends for its support not upon the pterygoid, but upon the palatine, as, for example, in the Penguins. But among the *Neognathæ* the vomer displays a striking series of stages in degeneration, becoming more and more divorced from the pterygoid, until it finally assumes the form of a minute nodule of bone, and at last, in the *Gallinæ*, it becomes a mere spicule of bone held by a few tendinous fibres to the anterior border of the expanded ends of the palatines, and in some, as in the *Falconidæ* for example, vanishes altogether. If nothing were known of the early post-embryonic developmental stages of the *Neognathine* vomer, it would have been impossible to divine that the *Neognathine* was a direct derivative from the *Palæognathine* palate.

These two orders, the *Palæognathæ* and *Neognathæ*, must be divided further, for the Class Aves, in the course of its evolution, has split up into a vast number of different forms. The genetic relation of these forms or types to one another, and the precise affinities of the individual members of the various groups, should as far as possible find expression in any system of classification. These divisions may be known as Orders, which are again divided into Sub-Orders, Families, Genera and Species.

Order I. PASSERES.

This edition of the Fauna follows its predecessor in beginning with the Passeres. The classification and further division of this Group presents more difficulties than all the rest put together.

Briefly, the Passeres may be defined as follows:—Skull ægithognathous (vomer truncated in front). Sternum with a large spina externa, and no spina interna. Clavicle with expanded free ends. Hypotarsus complex.

Wing lacking the biceps and expansor secondariorum muscles. Thigh muscles having no accessory femorocaudal or abiens muscles present.

Only one carotid—the left—is present. Cæca are vestigial. Oil-gland nude. Wing eutaxic.

The arrangement of the Sub-Orders adopted here is that of Gadow (Bronn's Thier-reichs, Bd. vi., ii. Syst. Theil, 1893). But the subdivision of the *Anisomyodi* is based on that of Pycraft (P. Z. S. 1905–6–7), his *Oligomyodi* answering in part to that of Huxley (P. Z. S. 1867).

	Sub-Order.	Group.	Family.	Sub-Family.
Order Passeres.	Anisomyodi	Clamatores	Eurylæmidæ.	
			Cotingidæ.	
			Philepittidæ.	
			Pipridæ.	
		Oligomyodi ...	Tyrannidæ.	
			Pittidæ.	
			Phytotomidæ.	
			Oxyrhampidæ.	
		Tracheophonæ...	Formicariidæ.	
			Dendrocolaptidæ.	
			Furnariidæ	Furnariinæ.
				Sclerurinæ.
				Synallaxinæ.
				Margarornithinæ.
				Phylidorhinæ.
			Conopophagidæ...	Conopophaginæ.
				Pteroptochinæ.
				Hylactinæ.
			Xenicidæ.	
	Diacromyodi....	.....	Menuridæ.	
			Oscines.	

Having regard to the fact that the main divisions of the Passeres are based on the structure of the syrinx, a brief summary

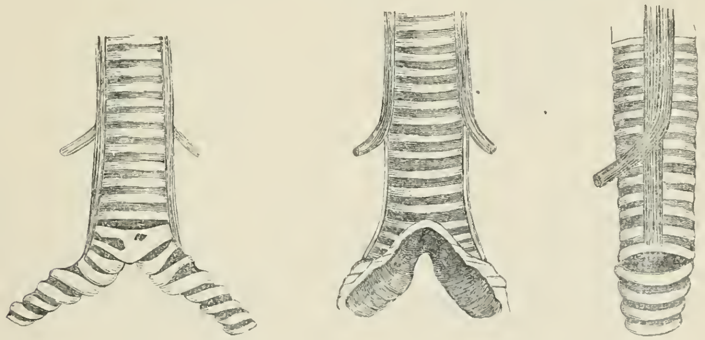
of the essential features of this organ, in so far as they concern the systematist, may be welcome.

The syrinx is the term applied to the lower end of the windpipe and the adjacent ends of the bronchi in birds, wherein these portions have become variously modified to form the organ of voice, which, in Mammals, is formed by the larynx—the upper end of the windpipe. But while in the Mammals the larynx is a comparatively stable structure, in the birds the syrinx presents a very remarkable range of differences both in regard to its fundamental structural characters, as well as of musculature.

For the present it must suffice to give a brief survey of the essential features of the syrinx in the Passeres and, for systematic purposes, the musculature is the dominant factor.

The syrinx, then, in this Group presents wide contrasts, even among Genera of the same Family, but nevertheless it conforms in its essential characters with that of the Aves as a whole. That is to say, it is formed of a number of bony or cartilaginous rings and semi-rings—some of which may be completely or partially welded—held together by thin membranes which serve not merely to support the framework, but also in the production of the "voice."

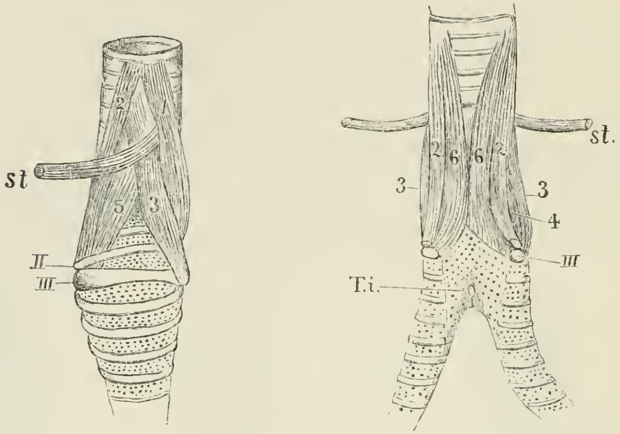
In the *Anisomyodi* the syringeal muscles are inserted either in the middle or on to the dorsal or ventral ends of the semi-rings.



Syrinx of *Pitta angolensis* (after Garrod, P. Z. S. 1876, pl. liii), showing the Anisomyodian attachment of the intrinsic muscles at the middle of the bronchial semi-rings. There is also a single pair of bronchial muscles, continued down from the sides of the windpipe, insignificant in size, quite lateral, and terminating by being inserted into the middle of the outer surface of the second bronchial semi-ring.

In the *Diacromyodi* these muscles are inserted into both ends of the semi-rings. They may be limited always to one pair as in *Clamatores*, to two as in *Oligomyodi* and some *Tracheophonæ* or there may be as many as seven pairs as in the *Oscines*. But the structure of the syrinx itself, as apart from its musculature, has been, and still is, a feature of importance in

the classification of the Passeres—as witness the *Tracheophonæ*. Briefly three types of syrinx are recognized—the Tracheo-bronchial, the Tracheal and the Bronchial, the last two being derivatives of the first. The tracheo-bronchial is the type found in the Oscines and Sub-Oscines. Herein the lower end of the trachea has the last four or five rings welded to form a little dice-shaped box communicating below with the bronchi. The bronchial rings I and II are closely attached to this box, while III forms a strong arcuate bar supporting a delicate sheet of membrane stretched between rings I and II on the one hand and IV on the other. The bronchial rings are incomplete on their inner aspects, their free ends supporting a "tympanic membrane," which plays an important part in voice



Syrinx of a Magpie, showing the Diacromyodian attachment of the intrinsic muscles at the ends of the bronchial semi-rings. The left-hand figure is a side view and the right-hand figure a dorsal view of the syrinx. The membranous parts between the bronchial semi-rings and the internal tympaniform membrane are dotted; II, III are the second and third bronchial semi-rings; *T.i*, the internal tympaniform membrane; *st*, the muscle from the side of the trachea to the upper end of the clavicle; 1, 2, 3, 4, 5, 6, the syringeal muscles; there is a 7th, which is hidden by the 6th; the 4th is hidden below and between the 1st, 2nd, and 3rd.

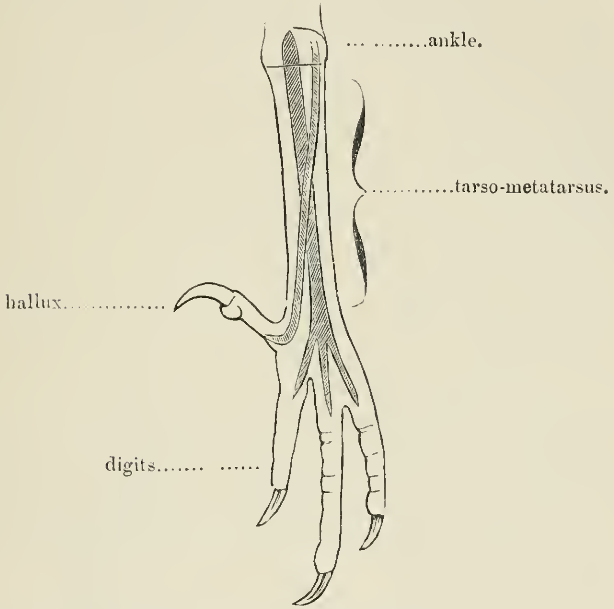
production. At the junction of the bronchi with the trachea is a bony bar—the "pessulus." This supports a thin fold of membrane whose free edge cuts across the bottom of the dice-shaped box of the tracheal tube. By its vibrations it acts like the "free reed" of an organ-pipe. Muscular lips extending from the inner surfaces of bronchial semi-ring III narrow the aperture on either side of the "reed" during the production of the "voice" or song, and thus complete the mechanism of voice production.

In the Tracheal syrinx a variable number of the lower tracheal

rings are reduced in thickness, leaving wide spaces filled by membrane. The range of sounds produced by this modification is much more limited than in the Tracheo-bronchial syrinx.

In the Bronchial syrinx the voice is produced by modification of the bronchi. But as this type does not occur among the Passeres, its description may be deferred.

It is not the purpose of this survey to pass in review all the anatomical characters which have been used as aids to the classification of this difficult Group, but rather to afford a concise summary of such as are regarded to-day as of importance.



Sketch showing the arrangement of the deep plantar tendons in a passerine bird. (From P. Z. S. 1875, p. 347.)

After the syrinx, systematists seem to have relied most upon the plantar tendons of the foot. Sometimes, indeed, too much reliance seems to have been placed upon these; that is to say, a too arbitrary use has been made of the evidence they afford.

Of these tendons two only are specially recognized in this connexion. These are the *Flexor profundus digitorum* and the *Flexor longus hallucis*. The first named arises from the greater part of the hinder face of the fibula and tibia, beneath all the other flexors, and at the intertarsal joint passes into a tendon, which, running through a perforation in the metatarsal tubercle, divides just above the distal end of the tarso-metatarsus, sending a slip

to each front toe. The *Flexor longus hallucis* arises from the outer condyle of the femur and from the intercondylar region. It accompanies, and is closely associated with, the *Fl. profundus* throughout its whole length. Passing also into the tendinous condition at the intertarsal joint, it crosses the *Fl. profundus* tendon near its middle, from behind and from without inwards to be inserted on the terminal phalanx of the hind toe. This, at least, is what obtains in all the Passeres save the *Eurylæmidæ*, where the *hallucis* tendon anchors itself to the *profundus* tendon at the point where the two tendons cross, by a number of tendinous fibres, to form what is known as a "vinculum." No less than eight different modes of anchorage between these two tendons are recognized. The typical Passeriform type is No. VII. of this series; that of the *Eurylæmidæ* is No. I.

Nitzsch, in laying the foundations of the study of the pterylosis, opened up a field of great promise, which, so far, has only very partially been explored by systematists. The attempt to use the number of the remiges as a factor in the subdivision of the Passeres has only resulted in the formulation of a test which is based on error. Thus, in the previous edition of this work an attempt was made to form two Groups of Passeres, the one displaying 9, the other 10 primaries. This was unfortunate, since all the so-called "9-primaried" Passeres possess 10 remiges, while many of the so-called "10-primaried" Passeres possess 11 remiges. The error has arisen from a failure to distinguish vestigial quills and their coverts. In the "9-primaried" Passeres the 10th may be reduced to the vanishing point. Where the 10th primary is conspicuously long, as in the Corvidæ, the 11th will be found as a "remicle," 1 cm. or more in length. Bearing these facts in mind, there can be no objection, for the sake of convenience, to the continued use of the division into 9-primaried and 10-primaried wings, the remicle being in both cases a negligible quantity.

So far, unfortunately, Ornithologists have made no more use of pterylosis than this numbering of the wing and tail-feathers. A vast amount of work has yet to be done, in investigating the pterylosis of the trunk, for the sake of the evidence it will unquestionably furnish as to the relationship of forms whose affinities can at the present be no more than guessed at. The *Paridæ*, *Ampelidæ*, *Oriolidæ* afford cases in point. True, we cannot discover this evidence by a study of the pterylosis alone—the osteology and myology of these puzzles must also be taken into account—but we shall have made great strides when this pteryological work has been thoroughly done. It is to be hoped that those who use these volumes will endeavour to take up this much neglected work.

The juvenile or "nestling" plumage of the Passeres affords very valuable data to the systematist. In the last edition of this

work it was pointed out that the juvenile plumage of the "10-primaried" Passeres seemed to consist of five types. "In the first the nestling resembles the adult female; in the second the nestling resembles the adult female but is more brightly coloured and generally suffused with yellow; in the third the nestling is cross-barred; in the fourth it is streaked; in the fifth and last mottled or squamated."

These divisions of the Passeres seem to be of great importance and have been adopted in this edition with but very minor modifications.

The whole system of classification here accepted is merely provisional and does not, and cannot, pretend to be final, but it is hoped that it will provide a sound basis upon which future Ornithologists can work. No classification will be found upon which there is universal agreement. Many Ornithologists hold that, whilst it is sound science to split species *ad infinitum*, it is equally unscientific to use the same arguments for splitting genera and families. I have considered classification purely as a means to an end—*i. e.* to enable the student to recognize any bird whose name and position he desires to ascertain. If "lumping" will assist him in this, I have amalgamated genera and families; but if lumping, by creating huge, unwieldy families, will lead to his confusion, I have split them so as to render his work easier and quicker. Each Order will be dealt with in turn as it is reached in the succeeding volumes.

Scheme of Indian Passerine Families.

A. (Diacromyodi.) Syringial muscles of the syrinx inserted on the ends of the bronchial semi-rings.
- *a*. The edges of the mandibles never serrated though sometimes notched.
  - a^1. Tongue non-tubular and not bifid or tufted.
    - a^2. The hinder part of the tarsus longitudinally laminated.
      - a^3. Wing with ten primaries, the 11th too minute to be seen.
        - a^4. Nostrils clear of the line of the forehead and nearer the commissure than the culmen.
          - a^5. Plumage of the nestling like that of the adult female, but duller and sometimes darker.
            - a^6. Nostrils completely hidden by feathers or bristles.
              - a^7. First primary exceeding half the second in length; plumage glossy and firm . . . . **Corvidæ.**
              - b^7. First primary less than half second . . . . **Paridæ.**
              - c^7. First primary exceeding half second; plumage lax and soft. **Paradoxornithidæ.**

b^6. Nostrils bare or merely overhung by hairs or plumelets.

d^7. Rictal bristles always present.

a^8. Inner and hind toe very unequal .... **Sittidæ.**

b^8. Inner and hind toe equal.

a^9. Wing rounded, tarsus long and strong .... **Timaliidæ.**

b^9. Wing more pointed, tarsus less strong and long .... **Pycnonotidæ.**

e^7. Rictal bristles absent.

c^8. Tail-feathers stiff and pointed. **Certhiidæ.**

d^8. Tail-feathers soft and rounded. **Troglodytidæ.**

b^5. Plumage of nestling mottled or squamated.

c^6. Nostrils not covered by any hairs.

f^7. Rictal bristles absent .... **Cinclidæ.**

g^7. Rictal bristles present .... . **Turdidæ.**

d^6. Nostrils more or less covered by hairs .... **Muscicapidæ.**

c^5. Plumage of nestling cross-barred.

e^6. Folded wings not reaching beyond middle of tail.

h^7. Shafts of rump-feathers soft .. **Laniidæ.**

i^7. Shafts of rump-feathers spinous. **Campephagidæ.**

f^6. Folded wings reaching to tip of tail .... **Artamidæ.**

d^5. Plumage of nestling spotted with white....................... **Dicruridæ.**

e^5. Plumage of nestling like the adults, but brighter .... **Sylviidæ.**

f^5. Plumage of nestling like the adults, but paler...................... **Regulidæ.**

g^5. Plumage of nestling streaked.

g^6. Rictal bristles present.

j^7. Nostrils covered with hairs .. **Irenidæ.**

k^7. Nostrils quite exposed.

e^8. First primary at least half length of second .... **Oriolidæ.**

f^8. First primary less than half second................ **Eulabetidæ.**

h^6. Without rictal bristles .... **Sturnidæ.**

b^4. Nostrils pierced, partly within line of forehead and nearer culmen than commissure .... **Ploceidæ.**

b^3. Wing with nine primaries, the 10th obsolete.

c^4. Bill conical, pointed and entire, the longest secondaries reaching to a point midway between the middle and top of wing.. ... . **Fringillidæ.**

d^4. Bill long, slender and notched, the longest secondaries reaching almost to tip of wing .... **Motacillidæ.**

e^4. Bill flat, broad and notched, the longest secondaries reaching to the middle of wing .... **Hirundinidæ.**

b^2. The hinder part of the tarsus transversely scutellated .... **Alaudidæ.**

b^1. Tongue tubular .... **Nectariniidæ.**

c^1. Tongue bifid, with small brushes at tip.

c^2. Plumage not metallic.................. **Zosteropidæ.**

d^2. Plumage more or less metallic .... **Chalcopariidæ.**

b. The edges of the mandibles finely serrated on the terminal third of their edges........... **Dicæidæ.**

B. (Anisomyodi.) Syringial muscles inserted either in the middle, or on the dorsal or ventral ends of the bronchial semi-rings.

c. *Flexor longus hallucis* and *Flexor profundus digitorum* not united with a vinculum ...... **Pittidæ.**

d. *Flexor longus hallucis* and *Flexor profundus digitorum* joined near the centre with a vinculum .... **Eurylæmidæ.**

Fig. 1.—*Urocissa m. occipitalis.*

Family CORVIDÆ.

The intrinsic muscles of the syrinx fixed to the ends of the bronchial semi-rings. The edges of both mandibles smooth, or the upper one simply notched; hinder aspect of tarsus smooth, composed of two entire longitudinal laminæ; wing with ten primaries; tongue non-tubular; nostrils clear of the line of forehead, the lower edge of the nostril generally nearer to the commissure than the upper edge is to the culmen; plumage of the nestling like that of the adult but paler; nostrils hidden by feathers and bristles; rectrices twelve; sexes absolutely alike; an autumn moult only.

In this family the first primary is long, exceeding half the length of the second, whilst the bill exceeds its depth in length.

It contains the Crows, Magpies, Jays, Nutcrackers, and

Choughs. All species are resident within the limits of this work except the Rook and the Hooded Crow, which are winter visitors to the North and North-West. Their summer quarters are, however, not far off and their migrations are only partial and local. The members of the genera *Corvus*, or the true Crows, *Pica*, the Magpies, *Nucifraga*, the Nutcrackers, and *Pyrrhocorax*, the Choughs, are birds of wide distribution but the members of the other genera are nearly all restricted to small areas.

The *Corvidæ* vary a good deal *inter se* in structure and habit. In one or two genera the nostrils are not so completely hidden by bristles as in the typical Crow. The majority feed completely on the ground, others are strictly arboreal. They all agree in laying four or five spotted eggs except certain species of the genus *Podoces*, which lay white eggs in burrows. The mode of nidification of the remaining genera varies greatly, some species breeding in holes of trees and cliffs, the others, the majority, constructing large nests of sticks and twigs. Most of them are omnivorous, but some of the smaller tropical species appear to confine their diet to insects.

The *Corvidæ*, as a family, have few characters in common, and yet there is no group of birds which is more easily recognized.

Key to Genera.

A. Nostrils distant from forehead about one-third length of bill: narial bristles rigid and straight, reaching to about middle of bill; or rictal bristles and feathers of face absent.
- *a.* Tail much shorter than wing .... CORVUS, p. 20.
- *b.* Tail much longer than wing .... PICA, p. 37.

B. Nostrils distant from forehead less than one-quarter length of bill; narial bristles or plumes short, never reaching to middle of bill.
- *c.* Tail greatly graduated, outer feathers less than half length of tail.
  - *a'*. Middle tail-feathers uniformly wide throughout or widening gradually towards tip.
    - *a''*. Bill red or yellow.
      - *a'''*. Tail more than twice length of wing .... UROCISSA, p. 40.
      - *b'''*. Tail less than twice length of wing .... CISSA, p. 45.
    - *b''*. Bill black .... DENDROCITTA, p. 47.
  - *b'*. Middle tail-feathers suddenly broadening towards tip .... CRYPSIRHINA, p. 56.
- *d.* Tail not much graduated, outer feathers more than half length of tail.
  - *c'*. Graduation of closed tail less than length of tarsus; rictal bristles extremely long............................ PLATYSMURUS, p. 58.

d'. Graduation of tail more than length of tarsus; rictal bristles moderate or obsolete.
- *c''*. Nostrils nearer edge of culmen than to lower edge of upper mandible.
  - *c'''*. Bill about half length of head, deep and notched .... GARRULUS, p. 59.
  - *d'''*. Bill about same length as head, slender and not notched .... NUCIFRAGA, p. 66.
- *d''*. Nostrils nearer lower edge of upper mandible than to culmen.
  - *e'''*. Wings long, falling short of the tip of the tail by less than length of tarsus .... PYRRHOCORAX, p. 69.
  - *f'''*. Wings short, falling short of the tip of the tail by more than length of tarsus........................ PODOCES, p. 71.

Genus **CORVUS** Linn., 1766.

The genus *Corvus* contains the Ravens, Crows, Rooks and Jackdaws. Seven species are found in India, several of which are divisible into well-marked geographical races, some of which were ranked by Oates as species whilst others equally easily differentiated were altogether ignored. Of the seven species some are widely distributed and well known to all, and others are confined to the Himalayas and the north-west portion of the Empire.

Corvus has the plumage black throughout or nearly throughout, and may be recognized by the position of the nostrils, which are placed far forward, about one-third the length of the bill from the forehead, and are entirely concealed from view by a multitude of very stiff, straight bristles that reach the middle of the bill. In these characters this genus agrees with the Magpies; but the latter may be separated by the length of the tail, which is very much longer than the wing, and the shape of the first primary, which is figured on p. 37.

The Crows are with two exceptions resident, the other two being only winter visitors.

The Rook forms a partial exception to the general characters given above for determining *Corvus*. Up to nine months of age it has the ordinary stiff bristles over the nostrils, but at that age it casts them all off, as well as the feathers on the front part of the head. Its appearance in this state is well depicted in the figure of the head given on p. 31.

Key to Species.

A. Size large, wing always over 380 mm. ...... *C. corax*, p. 21.
B. Size smaller, wing always under 380 mm.
- *a*. Crown and neck concolorous or nearly so.
  - *a'*. Lower plumage with little gloss, and this blue or green; bill stout, face feathered in adults.

a''. Plumage intensely black, feathers of hind neck firm and glossy with glistening shafts .... *C. corone*, p. 24.
b''. Plumage not so black, feathers of hind neck soft and decomposed with inconspicuous shafts .... *C. coronoides*, p. 25.
b'. Lower plumage intensely glossed with blue and purple, bill slender, face of adults bare .... *C. frugilegus*, p. 30.
b. Hind neck grey or ashy, contrasting with black crown.
c'. Wing exceeding 300 mm............... *C. cornix*, p. 32.
d'. Wing never as much as 300 mm.
c''. Chin and throat deep black contrasting with breast .... *C. splendens*, p. 32.
d''. Chin and throat grey like breast .... *C. monedula*, p. 36.

Corvus corax.

Key to Subspecies.

A. Plumage glossy black, the brown tint if present almost imperceptible.
a. Wing averaging about 420 mm. Bill about 71 mm. Throat-hackles short .... *C. c. laurencei*, p. 21.
b. Wing averaging about 500 mm. Bill about 81 mm. Throat-hackles long .... *C. c. tibetanus*, p. 23.
B. Plumage very brown on neck, upper back and scapulars .... *C. c. ruficollis*, p. 23.

(1) Corvus corax laurencei.

THE PUNJAB RAVEN.

Corvus laurencei Hume, Lah. to Yark., p. 235 (1873) (Punjab).
Corvus corax. Blanf. & Oates, i, p. 14 (1889).

Vernacular names. *The European Raven*; *Domkak*, *Doda* (Hind. in the N.W.); *Kargh* (Candahar).

Description. Entirely black, glossed with steel-blue, purple and lilac; the throat-hackles short and not very conspicuous.

Colours of soft parts. Iris brown; bill and legs shining black.

Measurements. Length from about 600 to 620 mm.; wing from 400 to 440 mm.; tail about 240 mm.; tarsus about 60 mm.; culmen about 64 mm. to 75 mm.

Distribution. Punjab, Bombay, United Provinces and N.W. Provinces, and a rare straggler into Kashmir and Central India. It occurs also in Sind, but in the N.E. of that province the Brown-necked Raven takes its place.

Outside of India the Punjab Raven is found through Baluchistan, S. Persia, Mesopotamia, Southern Asia Minor and Northern

Palestine. It is not easy to separate the breeding ranges of *ruficollis* and *laurencei*, but the former appears to be essentially a bird of deserts and bare hills whilst the Punjab Raven is more a bird of wooded country, though both are great wanderers and overlap one another constantly in their non-breeding haunts.

Nidification. This Raven makes a large nest of sticks, sometimes lined with a little wool, leaves or smaller, softer twigs and places it near the top of a tree either in the open or in thin forest. The eggs number from four to six, generally four or five and are a pale blue-green marked with deep brown and with underlying marks of pale grey and neutral tint. The markings are usually thickly distributed over the whole surface but are sometimes bolder and blacker and more sparse, making the eggs very handsome in appearance. They are typically rather long ovals. They average about 50·7 × 33·6 mm. The breeding season is from the end of December to early March.

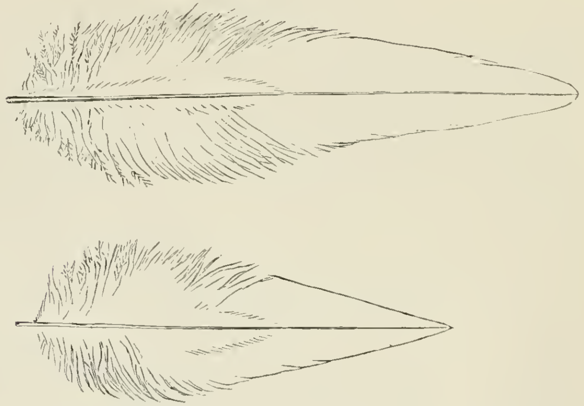


Fig. 2.—A throat-hackle of the Raven of Sikkim (*a*) and of the Raven of the Punjab (*b*).

Habits. The Punjab Raven is a very bold, confiding bird and has all the habits of the Common Crow, attending camps and villages and going about without fear but with the wariness of his tribe. Hume has noticed how a large number of Ravens die annually in the autumn on their first arrival in Sind from no apparent cause. This form of Raven will not be found far from trees in the breeding season, nor does it haunt hills and mountains of any great elevation, though it has been found at about 6,000 feet in the Simla Hills by Mr. P. Dodsworth.

(2) Corvus corax tibetanus.

THE TIBET RAVEN.

Corvus tibetanus Hodgs., Ann. Mag. N. H., (2) iii, p. 203 (1849) (Tibet).
Corvus corax. Blanf. & Oates, i, p. 14.

Vernacular names. *The Tibet Raven*, Jerd.; *Neka-wak* (Tibetan).

Description. A much bigger, more powerful bird than the Punjab Raven, with a bigger bill and the lanceolate hackles of the throat much longer and more pointed than in that bird.

Measurements. Wing from about 480 to 530 mm., nearly always between 490 and 510 mm. Culmen about 80 mm. and running up to 85 mm.

Distribution. The Himalayas from Kashmir to Eastern Tibet, including Sikkim, Bhutan and the hills north of the Brahmaputra in Assam.

Nidification. The breeding season of this fine Raven appears to be from early March to the middle of April and the eggs are generally laid whilst the whole country is still under snow. It appears to nest both in cliffs and in stunted trees and is not uncommon on the great Gyantse Plateau at 12,000 to 14,000 feet, nesting on the willows and thorn-trees. Mandelli also took its nest in Sikkim. The eggs number three to five in a clutch and taken as a series are very different from those of either *laurencei* or *ruficollis*. In general colour they are very dull, brown eggs; the ground-colour is much less blue or green-blue and the markings are more numerous, yet smaller and less bold in character.

Twenty eggs average 49·0 × 35·6 mm. A broader, bigger egg than that laid by either of our other Indian Ravens, though we have but few to judge from.

Habits. The Tibet Raven is a bird of lofty regions, being met with up to 18,000 feet in the summer and seldom below 9,000 feet even in mid-winter. Its note is said to be a harsher, deeper croak than that of the Punjab Raven, and over most of its range it is a much shyer, wilder bird, though it is said to haunt the vicinity of villages in Tibet. It was also reported as common all along the route taken by the Military Expedition to Lhassa, frequenting the camps, feeding on the animals that died on the march and acting as regular scavengers.

(3) Corvus corax ruficollis.

THE BROWN-NECKED RAVEN.

Corvus ruficollis Lesson, Traité d'Orn., p. 329 (1831) (Africa).
Corvus umbrinus. Blanf. & Oates, i, p. 15.

Vernacular names. None recorded.

Description. Differs from other Indian forms of Raven in

being a much browner bird in general coloration, more especially so on the neck and shoulders. The neck-hackles are even shorter than in *laurencei* and it is rather smaller also than either of the previous forms.

Measurements. Wing about 400 mm. and ranging between 380 and 420 mm. The bill in the Indian form is also more slender than it is in either the Tibet or Punjab Raven.

Distribution. Sind, Baluchistan, S. Persia, Palestine and N. Africa to Abyssinia.

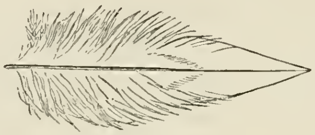


Fig. 3.—A throat-hackle of *C. c. ruficollis.*

Nidification. The Brown-necked Raven builds in cliffs or river banks throughout its whole area. In Baluchistan it apparently occasionally breeds in the rocky sides of the steeper and more broken gorges and cliffs. In South Palestine it breeds in great numbers in the river banks or in the many precipitous ravines in that country and the little that is on record concerning its breeding elsewhere agrees with this. It usually lays four eggs, often three only and sometimes five. Col. R. Meinertzhagen took a fine series of the eggs near Jerusalem. They are very small and can hardly be distinguished from those of a Carrion-Crow but they are rather poorly marked on the whole, less brown than those of the Tibet Raven but much less richly coloured than those of the Punjab Raven. They measure about 45·0 × 31·5 mm. The breeding season in Palestine seems to commence in early March, but in Baluchistan they lay in December and January.

Habits. This is essentially a bird of the desert or of rocky barren coasts and hills and wherever such are intersected by cultivated or better forested areas the Punjab Raven or some other form takes its place. It is a more companionable bird than either of its Indian relations and where it is most numerous several pairs may be seen consorting together.

Meinertzhagen, who has recently examined a mass of material, is unable to detect any characters by which *umbrinus* of India to Palestine can be separated from *ruficollis* of Africa.

(4) Corvus corone orientalis.

THE EASTERN CARRION-CROW.

Corvus orientalis Eversm., Add. Pall. Zoogr., ii, p. 7 (1841) (Buchtarma).
Corvus corone. Blanf. & Oates, i, p. 16.

Vernacular names. None recorded.

Description. The whole plumage very glossy black, the feathers of the hind neck firm and with glistening shafts.

Colours of soft parts. Iris brown; legs and bill shining black.

Measurements. Length about 500 mm.; wing about 330 to 350 mm.; tail about 190 mm.; culmen about 58 to 60 mm.; tarsus about the same.

The Eastern Carrion-Crow differs from the Common Carrion-Crow in being decidedly bigger, a more glossy *blue*-black in colour and in having the outer tail-feathers more graduated.

Distribution. Siberia from the Yenesei to Japan, south to Central Asia, Afghanistan, Eastern Persia, Kashmir, Tibet and N. China. Whitehead found it common in the Upper Kurram Valley.

Nidification. The Eastern Carrion-Crow is resident where found, but within Indian limits very little has been recorded about its history. It nests in the Kurram Valley, whence Whitehead sent me eggs, and also in Kashmir, from which State I have received others. It builds in trees and very often near villages or buildings, laying three to five eggs, which cannot be distinguished from those of the Common Carrion-Crow.

Habits. The Carrion-Crow is found up to 1,400 feet and higher during the hot weather but certainly breeds as low as 5,000 feet. In the winter it descends much lower and it was obtained by Magrath at Bannu. From its superficial resemblance to the Common Jungle-Crow it is possibly often overlooked and it may prove to be not uncommon in the plains in the extreme north-west of India. In Kashmir it is not rare but haunts the wilder parts of the country, though on the Afghanistan and Baluchistan frontier it is, according to Whitehead, generally found in the neighbourhood of villages and mankind.

Its voice is the usual croak of its tribe and its food is as omnivorous as that of the western bird.

Corvus coronoides.

The Jungle-Crow.

Our Indian Jungle-Crows have hitherto been known by the name of *macrorhynchus*, a name which really applies to their Javan cousin, but they are merely races of the Australian Jungle-Crow, and must therefore be known specifically by the name *coronoides*, though they form several well-defined subspecies.

Key to Subspecies.

A. Wing about 305 mm., bill about 60 mm. . . *C. c. levaillanti*, p. 27.
B. Wing about 290 mm., bill about 56 mm. . . *C. c. culminatus*, p. 28.
C. Wing about 330 mm.
  a. Bill about 60 mm., more slender . . . . . . *C. c. intermedius*, p. 28.
  b. Bill about 65 mm., more massive . . . . *C. c. andamanensis*, p. 29.

A feature which is also of some use in distinguishing geographical races is the colour of the bases of the feathers. In southern birds these are nearly always very dark, in Central Indian birds they vary a great deal from pale dirty white to dark, whilst in the northern mountain birds when *fully adult* they are generally pale and often pure white. Andaman birds seem invariably to have the bases to their feathers a very pure white, and differ in this respect from their nearest allies in Assam and

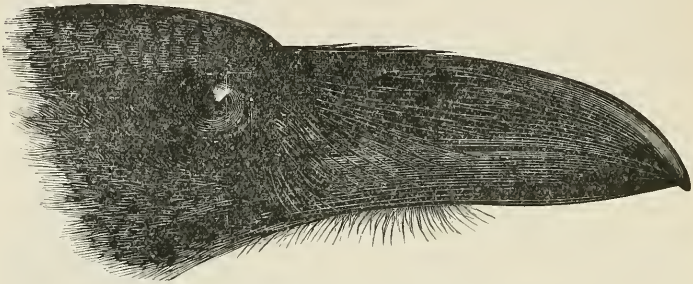


Fig. 4.—Head of *C. coronoides.*

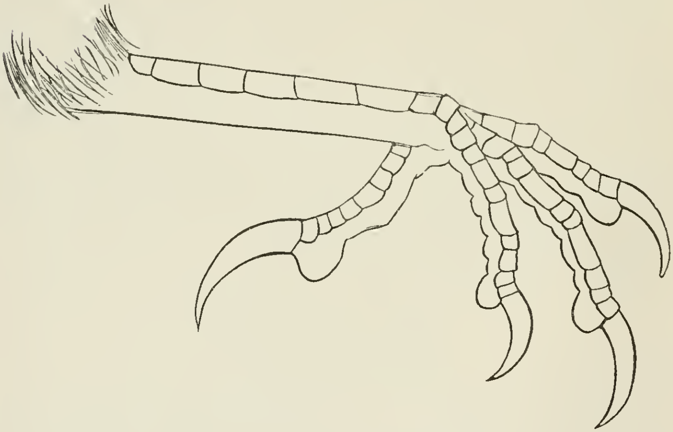


Fig. 5.—Foot of *C. coronoides.*

Burma, from which it may be found necessary to separate them; they agree with these, however, in their very heavy bills.

As so much of the material for examination in museums is unsexed, it has been very difficult to draw conclusions from measurements. It must be remembered, however, that females on the whole run smaller than males and certainly have smaller, slighter bills. Although non-migratory birds and in their wilder

haunts keeping to very restricted areas, the races which have taken to scavenging cities and villages for food probably travel over very wide areas in the non-breeding season and the result of this habit is that we are often faced with conflicting measurements from the same locality.

It is most noticeable in the geographical races of this Crow that the eggs are more easily differentiated than the birds themselves.

(5) Corvus coronoides levaillanti.

THE INDIAN JUNGLE-CROW.

Corvus levaillanti Less., Traité d'Orn., p. 328 (1831) (Bengal).
Corvus macrorhynchus. Blanf. & Oates, i, p. 17.

Vernacular names. *The Indian Corby*, *the Slender-billed Crow*, Jerdon; *Dhar* or *Dhal-Kawa* (Hindi in the North); *Karrial* (Hindi); *Dad-Kawa*, *Jungli-Kawa* (Bengali).

Description. Upper plumage glossy black, except the hind neck and sides of neck, which are almost glossless, and of which the feathers are disintegrated and silky, not of the intense black of the other parts, and with the shafts not conspicuously different from the webs.

Colours of soft parts. Iris brown, or very dark almost black-brown ; legs, feet and bill black.

Measurements. Length from about 430 to 510 mm. (about 17 to 20 inches); tail about 170 to 200 mm.; wing about 304 mm., but varying from about 290 to 330 mm.; culmen about 60 mm.

Distribution. The Common Indian Jungle-Crow extends over the whole of India south of the Himalayas, as far South as the Deccan and on the East to about the latitude of the Madras Presidency. To the North-east it is found up to the Bay of Bengal, but east of the Brahmaputra its place is taken by the Burmese form.

Nidification. The breeding season of this race of Jungle-Crow over the greater portion of its habitat is from the middle of December to the middle of January but in the north-eastern portion of its range, such as Behar, Oudh, etc., it appears to lay in March and April. The nest is a very well-made neat cup of small and pliant twigs, much and compactly intermixed with leaves, moss, etc., and well lined with hair, grass or wool. It is generally placed high up in some tree away from villages and towns but may occasionally also be found building right inside the streets of big cities.

The eggs number four or five, rarely six, and are quite typical Crows' eggs, but, compared with those of the hill races, are much smaller and much paler in general tint. In shape also they average longer in proportion. One hundred eggs average 39·6 × 28·9 mm.

Habits. Normally the Jungle-Crow is, as its name implies, a bird of the forests and jungles rather than of cities and civilization : at the same time this particular race has taken to emulating the Indian House-Crow in haunting the abodes of men and, even where it still keeps to the jungles, generally selects places within easy distance of some village, possibly for the sake of the food it is able to scavenge from it. It is not nearly so gregarious as the House-Crow, and, except in the towns, each pair has its own special territory, from which it excludes all others of its own kind.

(6) Corvus coronoides culminatus.

THE SOUTHERN JUNGLE-CROW.

Corvus culminatus Sykes, P. Z. S., 1832, p. 96 (Deccan).
Corvus macrorhynchus. Blanf. & Oates, i, p. 17.

Vernacular names. *Dheri-kawa* (Hind. South); *Kaki* (Telegu); *Kadu-Kaka* (Tel. Travancore); *Kaka* (Tamil); *Goyegamma Kaka* (Ceylon).

Description. Only differs from the previous bird in being smaller, with generally a smaller, more slender bill and in having the bases to the feathers nearly always dark in the adult as in the young.

Colours of soft parts as in *levaillanti*.

Measurements. Wing from 272 to 305 mm., in one case only 319 (possibly a wanderer), and averaging about 291 mm. Culmen about 55 to 56 mm.

Distribution. India in the Madras Presidency southwards, the Deccan and south through Malabar and Travancore to the south of Ceylon.

Nidification. In the northern portion of its habitat this Crow breeds in December to February, but in Ceylon it breeds in June and July, though possibly in other months also. The nest is similar to that of the Common Indian Jungle-Crow, but the 60 eggs available for measurement average only $38{\cdot}0 \times 28{\cdot}1$ mm. In colour they seem to be richer and darker than those of the northern bird and to be of a stouter, shorter oval.

Habits. Similar to those of the other races, but it is perhaps more really a jungle bird than is *levaillanti*. In Ceylon it is said (Wait) to keep much to the coastal areas, which are well forested.

(7) Corvus coronoides intermedius.

THE HIMALAYAN JUNGLE-CROW.

Corvus intermedius Adams. P. Z. S., 1859, p. 171 (Kashmir).
Corvus macrorhynchus. Blanf. & Oates, i, p. 17.

Vernacular names. *Ulakpho* (Lepcha); *Ulak* (Bhutea).

Description. A very large bird with a bill little if anything

larger than that of the Northern Indian race. In adults the bases of the feathers are generally pale and in some pure white.

Colours of soft parts as in *levaillanti*.

Measurements. Wing averaging over 330 mm. and running up to as much as 368 in two birds, one from Simla and one from Sikkim.

If birds from only the higher portions of their habitat were taken, the wing average would probably be well over 340 mm., but the average is greatly decreased by late summer birds, which may well be visitors from the plains wandering into the hills after breeding. Thus both in Murree and Mussoorie individuals occur with wings of about 290 mm. and there is a specimen in the British Museum from Gilgit with a wing of only 285 mm.

Distribution. The Himalayas from Afghanistan to Bhutan and ? Dafla Hills.

Nidification. This form is essentially a jungle-breeder, though it may place its nest in forest not far from habitations. Round about Simla the deodar is a favourite nesting site, the nest being placed very high up and even better and more compactly built than that of the plains' birds. The clutch is bigger also, five being not uncommon and six sometimes met with. The eggs average $44 \cdot 8 \times 30 \cdot 0$ mm. and are much more richly and brightly coloured than are the eggs of the plains' birds. The breeding season lasts from the middle of March to the end of May.

Habits. The Himalayan Jungle-Crow is found from the foot-hills up to at least 10,000 feet, though it may not be common at this elevation. Birds from the hot country below 1,000 or even 2,000 feet elevation are intermediate between the plains and the mountain forms and cannot be correctly assigned to either. This is, of course, the case in intermediate areas between geographical races of all species.

The Himalayan bird is not so much addicted to haunting the vicinity of human habitations as is the Common Jungle-Crow and pairs may be found inhabiting stretches of forest far from any camp or village. Its voice is notably louder and deeper than that of the plains' bird.

(8) Corvus coronoides andamanensis.

THE ANDAMAN JUNGLE-CROW.

Corvus andamanensis Tytler, Beavan, Ibis, 1866, p. 420 (Pt. Blair, Andamans).
Corvus macrorhynchus. Blanf. & Oates, i, p. 17.

Vernacular names. *Kak-sorai, Jungla Kak-sorai* (Assamese); *Hagrani Dao-ka* (Cachari); *Inrui-kak* (Kacha Naga); *Vo-kak* (Kuki); *Taw-chegan* (Burmese); *Kwak* (Siamese).

Description. This race is distinguished from the Himalayan bird by its long, very stout bill and from the other races by its greater size.

Measurements. Wing about 325 mm.; the males run from 304 to 345 mm. and the females from about 290 to 321 mm. The bill is very long, never under 58, generally well over 60 and running up to 70 mm., the average being about 65 mm. In addition to its length it is stouter and heavier than in any other form.

Distribution. Andamans, Assam, Burma, and North and West Siam. I cannot find any satisfactory character which suffices to separate the Andaman birds from the others. In all the island adults the bases to the feathers are very pure white, whereas in the Assam and Burmese birds they range from almost pure black to more than equally pure white. Northern birds have more white than southern, but even this is only a question of degree in average.

Nidification. In Assam and N. Burma almost entirely a jungle bird; in Central and Lower Burma it frequents the neighbourhood of human habitations more freely, occasionally building its nest in towns and villages. The nest is the neatest and best built of any made by Crows, and I have seen specimens made entirely of moss and moss roots and so neatly lined with hair and fur that they would have been a credit to any bird architect. The eggs number four to six and differ from those of *intermedius* in being duller, browner and darker in their general tint and being somewhat broader in proportion to their length. They average 43·1 × 31·6 mm. In Assam and Upper Burma the breeding season is during April and May but in Lower Burma and Siam January and February are the laying months.

Habits. These do not differ from those of the other Jungle-Crows, but over a considerable portion of their northern range they are shy, retiring birds, generally frequenting heavy forest and never scavenging round about villages. Each pair has its own territory over which it hunts and in the breeding season it is most destructive to other birds' eggs and young. It ascends the hills up to some 6,000 feet but is not common above this height, though it wanders up to 8,000 or even 9,000 feet. It occurs all over the plains except, perhaps, in the driest portions of Central Burma.

(9) Corvus frugilegus tschusii.

THE EASTERN ROOK.

Corvus frugilegus tschusii Hartert, Vög. Pal., i, p. 14 (1903) (Gilgit).
Corvus frugilegus. Blanf. & Oates, i, p. 18.

Vernacular names. None recorded.

Description. The whole plumage black; the head, neck and lower plumage richly glossed with purplish blue, the upper plumage with violet-purple; the base of the bill and face without any feathers and showing up white.

The Eastern race differs from the typical bird in being smaller and especially in having a smaller, more slender bill.

Colours of soft parts. Bill and feet black; iris deep brown; facial skin white.

Measurements. Total length about 480 mm. or less; wing about 300 mm.; tail about 160 mm.; culmen 52 to 60 mm.

The Nestling is without any gloss at first, but quickly assumes it. Until about 10 to 12 months old the face is fully feathered; the nasal bristles are then cast, and by the time the bird is a year old the face is entirely denuded of feathers. Whitehead says that the Eastern form does not shed its facial feathers until April or until it is practically a year old.

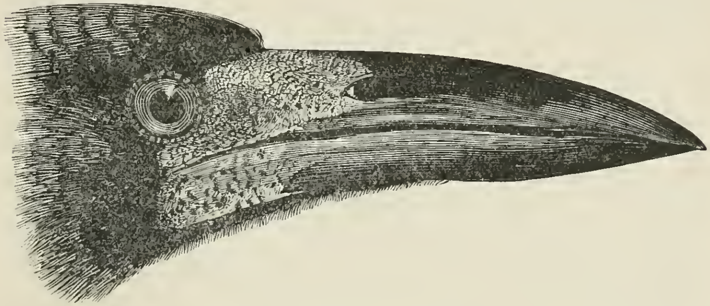


Fig. 6.—Head of *C. f. tschusii.*

Nidification. The Eastern Rook breeds in Persia, Turkestan and North-West Siberia, and probably Ladakh. A nest taken for me by a native collecter was built on a small tree and contained three eggs, similar to those of the Common Rook and measuring 34·0 × 26·0; 33·6 × 25·9; and 34·1 × 25·0 mm. The female was shot on the nest.

Habits. The Eastern Rook is a very common winter visitor to the North-West Himalayas and occasionally wanders into the plains, having been killed at Abbottabad. Whitehead and Magrath report it as visiting Kohat in enormous numbers. The Rook frequents the better cultivated parts of the country and feeds in ploughed and grass-covered lands on worms, snails, grubs and grasshoppers, etc. In Europe the Western form breeds in large societies but there is little on record about the Eastern form.

(10) Corvus cornix sharpii.

THE EASTERN HOODED CROW.

Corvus sharpii Oates, Avifauna of B. I., i, p. 20 (1889) (Siberia).
Corvus cornix. Blanf. & Oates, i. p. 19.

Vernacular names. None recorded.

Description. Entire head and neck, the central part of the upper breast, the wings, tail and thighs glossy black; remainder of the plumage *drab*-grey; the shafts of the upper parts black, those of the lower brown.

The light parts in the Common Hooded Crow are *ashy*-grey of quite a different tint and the races are easily separable.

Colours of soft parts. Legs and bill black: irides dark brown.

Measurements. Total length about 480 mm.; wing about 320 to 340 mm.; tail about 200 mm.; culmen 47 to 54 mm.; tarsus about 55 mm.

Distribution. Breeding in West Siberia, Turkestan and Afghanistan, and migrating south to the extreme north-west of India, Punjab, Gilgit and the North-West Frontier. Rare visitor to Kashmir, where Mr. T. R. Livesey records seeing it; this was on Jan. 10th near the Hokra Jheel. The birds of S.E. Persia seem to be nearer to this race than to *C. c. capellanus*.

Nidification. Mr. A. J. Currie obtained what he considered to be this form of Hooded Crow breeding in great numbers in and about Kerman, S.E. Persia, at considerable elevations. The nests were of sticks, twigs, roots, etc., lined with somewhat finer material and placed in trees both evergreen and deciduous. The eggs number four or five and are laid in early April. They are quite indistinguishable from those of the Common Hooded Crow and measure about 42·2 × 29·6 mm. They vary in coloration to the same extent as all Crows' eggs do.

Habits. The Hooded Crow has much the same habits as the Carrion-Crow, being shy and frequenting the more barren parts of the countries it inhabits. In addition to eating the usual food of its ally, it is said to feed on grain and to be found in fields searching the ground like the Rook.

A common winter visitor to the extreme North-west of India.

This form of Hooded Crow as well as the European form seems to interbreed freely over part of their northern habitat with the Carrion-Crow.

Corvus splendens.

Key to Subspecies.

A. Difference between grey and black portion of plumage well defined .... *C. s. splendens*, p. 33.
B. Pale portions of plumage very pale contrasting strongly with dark .... *C. s. zugmayeri*, p. 34.

C. Contrast between pale and dark plumage very slight and ill-defined .... *C. s. insolens*, p. 34.
D. Contrast between pale and dark plumage slight, yet easy to define .... *C. s. protegatus*, p. 35.

(11) Corvus splendens splendens.

The Common Indian House-Crow.

Corvus splendens Vieill., Nouv. Dict. d'Hist. Nat., viii, p. 44 (1817) (Bengal); Blanf. & Oates, i, p. 20.

Vernacular names. *Kawa*, *Pati-kawa*, *Desi-kawar* (Hindi in various districts); *Kag* or *Kak* (Bengali); *Myen-Kwak* (Manipur); *Kak-sorai* (Assam); *Noni Das-kak* (Cachari); *Manchi Kaki* (Tel.); *Nalla Kaka* (Tamil).

Description. Forehead, crown, lores, cheeks, chin and throat deep glossy black; nape, ear-coverts, the whole head, upper back and breast light ashy brown; wings, tail and remainder of upper plumage glossy black; lower plumage from the breast dull brownish black; the feathers of the throat are lanceolate and the whole of the black portions of the plumage are highly resplendent with purple-blue and greenish reflections.

Colours of soft parts. Iris dark brown; legs and bill black.

Measurements. Length about 420 to 440 mm.; wing from about 250 to 275 mm.; tail about 170 mm.; tarsus about 50 mm. and culmen 45 mm.

Distribution. The whole of India, except Sind and perhaps the extreme north-west, to the extreme south, Assam, Manipur, Lushai and the north of Arrakan and the Chin Hills.

Nidification. The breeding season varies very greatly according to locality. In the greater part of Bengal and its eastern range it breeds in March and April, but in Dacca I found it breeding in December, January and again in April and May; in its north-western range it breeds in May, June and July; and in Assam, Manipur and N. Burma in April and May. The nest is a rough affair of sticks lined with smaller twigs and other miscellaneous softer material, and is placed at all heights in trees, growing in and round about cities, towns and villages.

The eggs number four or five or sometimes six, very rarely seven. They are typical Crows' eggs and run through the same range of variations as do those of all the *Corvidæ*. The ground is any shade of blue-green, and the markings are of dull reddish and brown with secondary markings of grey and neutral tint, usually they are small and irregular in shape and are scattered profusely over the whole egg. The average of 100 eggs is $37{\cdot}2 \times 27$ mm.

Habits. The Indian House-Crow is one of the most familiar birds throughout its habitat, whatever race it may belong to. It haunts human habitations and follows human beings as civilization gradually usurps the place of jungle or forest and wherever

man is, there, sooner or later, it will surely be found. Probably originally purely a plains' bird it has followed rail and road routes into the hills almost everywhere, being now found in hill stations at elevations of 6,000 and 7,000 feet or even higher. Whitehead says that in the Kurram (this is probably *zugmayeri*) it remains in the hills all the year round except in very severe weather but in most of the higher haunts it is a winter visitor only. It is one of the boldest, yet one of the most astute of birds, and whilst on the one hand it will snatch food from the very hands of the Indian servants, a very few shots will keep every crow in the neighbourhood out of shot *until* the gun is put away. In many cities and towns they are so numerous as to become an actual pest and measures have to be taken to suppress them.

(12) Corvus splendens zugmayeri.

The Sind House-Crow.

Corvus zugmayeri Laubm., Orn. Monatsb., xxi, p. 93 (1919) (Las Bela, S.E. Baluchistan).
Corvus splendens. Blanf. & Oates, i, p. 20.

Vernacular names. *Pat-Kawar* (Hind.).

Description. Like *C. s. splendens*, but with the pale parts almost white and showing in sharp contrast to the black.

Colours of soft parts and **Measurements** as in the Common House-Crow.

Distribution. Baluchistan, Afghanistan, Sind, Mekran coast and S.E. Persia as far north as Fao. It is common in Kashmir, where it breeds, and wanders into the Punjab.

Nidification. The breeding season of the Sind House-Crow appears to commence in the latter half of June as soon as the monsoon breaks. It breeds in immense numbers all round and in Karachi and as nesting sites are here not too common, for trees are comparatively few, many eggs are thrown out of the nest during squabbles between the owner of the nest and other crows. Nest and eggs are like those of the other races but the nest is often placed on quite low bushes, especially if they are thorny ones.

Sixty eggs collected for me by General R. Betham average $37{\cdot}5 \times 25{\cdot}8$ mm.

Habits. These do not differ from those of the other races.

(13) Corvus splendens insolens.

The Burmese House-Crow.

Corvus insolens Hume, S. F., ii, p. 480 (1874) (Tenasserim); Blanf. & Oates, i, p. 21.

Vernacular names. *Kyeeyan*, *Cheyan* (Burmese).

Description. Similar to the Indian House-Crow, but with the dark parts shading into the lighter, which are ill-defined and a blackish grey.

Distribution. Burma, Siam, Yunnan, Cochin China and the north of the Malay Peninsula. Its southern limit is not known, but it extends to villages some way south of Mergui.

Birds from Assam, N. Chin Hills and N. Arrakan are somewhat intermediate as would be expected, but are nearer *splendens* than *insolens*. Wickham reports that he found the Common Crow at Sandoway to be *splendens* and not the Burmese form.

Nidification. Indistinguishable from that of *splendens*. One hundred eggs average 35·1 × 26·1 mm.

Habits. In Burma this race takes the place of the Indian bird in every way, and is its equal in familiar insolence and crafty care for its own safety.

(14) Corvus splendens protegatus.

THE CEYLON HOUSE-CROW.

Corvus splendens protegatus Madar., Orn. Monatsb., xii, p. 195 (1904) (Colombo).
Corvus splendens. Blanf. & Oates, i, p. 20.

Vernacular names. *Manchi Kaki* (Tel.); *Nalla Kaki* (Tam.); *Karari-Kaki*, *Kakum* (Ceylon); *Graya* (Portuguese in Ceylon).

Description. Very similar to *insolens*, but the light parts are not quite so dark as in that race and are more easily defined from the black.

Colours of soft parts as in *splendens*.

Measurements. A rather smaller bird than *splendens*; wing generally between 220 and 250 mm.; other parts in proportion.

Distribution. Ceylon only. Specimens from the extreme south of Travancore are very dark compared with Northern Indian birds, but are nearer to those than to the small dark Ceylon subspecies.

Nidification. One hundred eggs collected by Messrs. W. E. Wait and W. W. A. Phillips average 34·8 × 25·6 mm., and are not distinguishable in colour from those of other races.

Habits. Though neither so numerous nor so ubiquitous in Ceylon as its confrères in other parts, there is no difference to be recorded in their habits.*

* *Corvus splendens maledevicus* Rchw. (Wiss. Erg. D. Tiefsee-Exp., p. 356, 1904) appears to be described from some form of House-Crow imported into the Maldives. Only a single specimen was obtained. It is impossible to say what race this bird is, and the name cannot be maintained.

(15) Corvus monedula sœmmeringii.

THE EASTERN JACKDAW.

Corvus sœmmeringii Fischer, Mém. Soc. Imp. Natur. Moscou, i, p. 3 (1811) (Moscow).
Corvus monedula. Blanf. & Oates, i, p. 22.

Vernacular names. *Paya* (Tibetan).

Description. Forehead and crown glossy black; nape and hind neck dusky grey; sides of the head and neck light grey, almost white, and forming a half-collar on the posterior portion of the side of the neck; lores blackish; upper plumage, wings and tail bluish black with a considerable amount of gloss; chin and cheeks black with grey shaft-streaks; throat and fore neck entirely black; remainder of lower plumage slaty black with very little gloss.

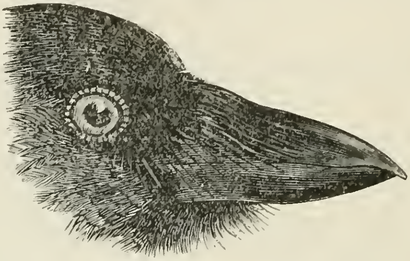


Fig. 7.—Head of *C. m. sœmmeringii.*

Colours of soft parts. Iris nearly white; legs, feet and bill black.

Measurements. Length about 320 to 340 mm.; wing 230 to 250 mm.; tail about 135 mm.; tarsus about 44 mm.; culmen 32 to 34 mm.

Distribution. Breeding from Eastern Russia, Macedonia, Bulgaria, Turkey, through Asia as far east as the Yenesei and south to Persia, Afghanistan, Kashmir, Ladakh and Eastern Tibet In winter it wanders into the plains, being numerous close to the Himalayas and having been found as far south as Ferozepore, Jhelum and Kalabagh, and as far east as Umballa.

Nidification. The Eastern Jackdaw breeds in great numbers in Kashmir, West Ladakh, Gilgit, etc., making its nest of all kinds of rubbish in old buildings, hollow trees and holes in cliffs. It lays four to seven eggs—of a very pale sea-green colour, sparsely marked with spots and specks of dark brown and purple. They average about $34{\cdot}2 \times 24{\cdot}9$ mm. in size but vary very much both in length and breadth, even in the same clutch. The breeding season commences in April but eggs may be found until the end of June.

Habits. This Jackdaw is in habits much the same as its western cousin but in the wilder parts of its habitat it is essentially a cliff bird. It is very fond of company, and numerous birds are often seen together, though it can hardly be called gregarious like the Rook. Its food consists of all kinds of grain, seeds, fruit and insects. It will also kill and eat mice, lizards and nestlings of other species, though not nearly to the same extent as the Carrion-Crow or Raven.

Our Indian and Central Asian bird has been again separated by Kleinschmidt as having the under parts darker and the wing longer than in Russian birds but the fine series in the British Museum does not endorse this diagnosis.

Genus **PICA** Brisson, 1760.

There is but one species of *Pica* in India containing three subspecies which grade into one another in the areas where they meet, but which are well differentiated over large tracts of country in which their characteristics are quite constant.

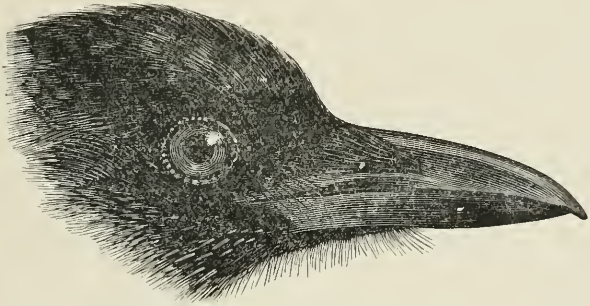


Fig. 8.—Head of *P. pica bactriana.*

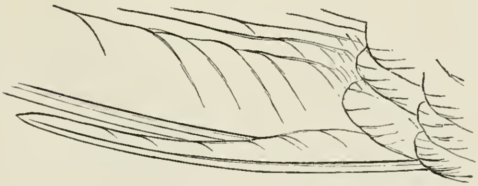


Fig. 9.—First primary of *P. pica bactriana.*

Pica differs from *Corvus* in having a very long graduated tail and in having a first primary of very peculiar shape. The Magpies are, however, more addicted to well-wooded districts; they are equally wary and they are almost omnivorous.

Pica pica.

Key to Subspecies.

A. A white rump, sometimes reduced to a dull grey band.
a. Gloss on wings green. .... *P. p. bactriana*, p. 38.
b. Gloss on wings blue .... *P. p. serica*, p. 39.
B. Rump wholly black .... *P. p. bottanensis*, p. 39.

(16) Pica pica bactriana.

THE KASHMIR MAGPIE.

Pica bactriana Bonap., Conspect., i, p. 383 (1850) (Kandahar).
Pica rustica. Blanf. & Oates, i, p. 24.

Vernacular names. *Akha* (Cabul); *Aq aq* (Mesop.).

Description. The entire head and neck, the upper plumage, breast, thighs, vent and under tail-coverts black, the rump with a broad white band across it; scapulars, abdomen, and the greater portion of the primaries white; wings brilliantly glossed with blue, and the tail with green, lilac and purple.

Differs from the British Magpie in having a broader white rump band. It is said also to be larger; Hartert gives the European bird a wing of 155 to 193 mm. and *bactriana* a wing of 210 mm. and over. I find, however, that whilst many English birds have a wing of over 210 mm., many Indian specimens have it under 190 mm.

Colours of soft parts. Iris dark brown; bill and legs black.

Measurements. Wing 182 to 227 mm., generally well over 200 mm.; tail anything from 200 to 270 mm., usually about 240 mm.; culmen 30 to 32 mm.; tarsus from 40 to 45 mm.

Distribution. Throughout Northern Asia to Kamschatka and South to South Persia, Afghanistan and Kashmir. It is found also in Kumaun, the Simla Hills and Garhwal, but not apparently in Nepal.

Nidification. The Kashmir Magpie seems to be resident and to breed wherever found. It is very common in Kashmir, breeding in great numbers between 6,000 and 10,000 feet, making a nest like that of others of its tribe—a cup of twigs, bents and roots with a dome of twigs, often with moss, thorns, and lined with roots or wool. It is usually placed well up in a fairly high tree but sometimes comparatively low down in thorny bushes. The eggs number four to seven and are indistinguishable from those of the Common Magpie. The ground-colour is a pale sea-blue green and the markings consist of small blotches, freckles and spots of dull reddish brown, scattered profusely all over the egg but more numerous at the larger end. They average 35·7 × 24·4 mm.

The breeding season is from early April to late May, according to elevation.

Habits. The Magpie is found in well-wooded parts of the country and near cultivation. Two or more pairs may often be seen in company, and in parts of Kashmir where they are very common several birds may be found together. They do not come very low down the hills in winter, and are seldom found below 5,000 feet. They are very conspicuous birds on the wing, their black and white plumage, long waving tail and undulating flight quickly attracting the eye. They eat insects, fruit and grain, and their voice is typically harsh and Corvine in character.

(17) Pica pica serica.

THE CHINESE MAGPIE.

Pica serica Gould, P. Z. S., 1845, p. 2 (Amoy, China).

Vernacular names. None recorded.

Description. "Closely allied to the Common Magpie but differs in the wings being blue instead of green, in the rather less extent of the white" (*Gould*). Gould also says that this form has a larger bill and a much longer tarsus.

Colours of soft parts and **Measurements** as in *bactriana.*

Distribution. Upper Burmese Hills, through China to South Japan, north to Korea and south to Hainan and Formosa.

Nidification. This Magpie breeds freely in the Chin and Kachin Hills and in Shan States in February, March and early April, and eggs were also taken by Styan in Foochow in the latter month. In N.E. Chihli, La Touche found it breeding in May and June. Nest and eggs are similar to those of *P. p. bactriana*, forty of the eggs averaging 35·5 × 24·3 mm.

In the Chin Hills this bird is often victimized by the Koel, and Col. Harington found many Koels' eggs in Magpies' nests.

Habits. Similar to those of other members of the genus. According to La Touche it is migratory in China, assembling in large flocks prior to commencing its journey southwards. In Burma it is resident.

(18) Pica pica bottanensis.

THE BLACK-RUMPED MAGPIE.

Pica bottanensis Delessert, Rev. Zool., 1840, p. 100 (Butan); Blanf. & Oates, i, p. 25.

Vernacular names. None recorded.

Description. Similar to the Common Magpie, but with the rump entirely black. It is much larger, with a shorter tail.

Colours of soft parts as in *P. p. bactriana.*

Measurements. Length about 525 mm.; wing from 225 to

270 mm., generally over 250 mm.; tail from 250 to 300 mm.; tarsus 56 mm.; culmen about 80 to 85 mm.

Distribution. Sikkim, Bhutan and East Tibet to Kansu.

Nidification. This fine Magpie breeds both in Sikkim and South and East Tibet at heights over 10,000 feet and up to nearly 15,000 feet The nest is similar to that of the Common Magpie but is often placed comparatively low down in thorn-bushes. The eggs number from four to six in a full clutch, and are rather dark as a series but otherwise like those of other species of *Pica*. They are very big and forty-eight eggs average 38·7 × 26·7 mm.

The birds breed from early April, when there is still snow about, through May and rarely, possibly a second time, in June.

Habits. Similar to those of other birds of the genus.

Genus **UROCISSA** Cabanis, 1850.

The genus *Urocissa* contains a few brightly plumaged Magpies which are found in India and China. They differ from the true

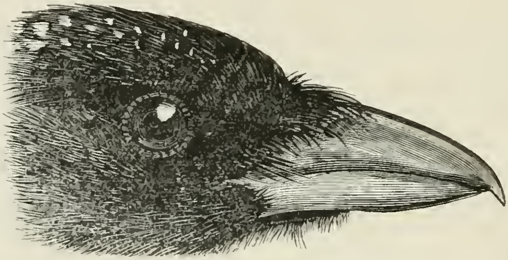


Fig. 10.—Head of *U. m. occipitalis.*

Magpies in having the nostrils, which are covered by rather soft plumes, not by stiff bristles, situated near the base of the bill; in having a longer tail and a bill which is red or yellow but never black.

Key to Species.

A. Bill red. Nuchal white patch large, reaching to the end of the black on the hind neck .... *U. melanocephala*, p. 40.
B. Bill yellow. Nuchal patch small, not reaching to the end of the black ...... *U. flavirostris*, p. 43.

Urocissa melanocephala.

Key to Subspecies.

A. Patch on the head pale blue .... *U. m. melanocephala*, [p. 41.
B. Patch on the head pure white.
  a. Bill smaller, under 33 mm. .... *U. m. occipitalis*, p. 41.
  b. Bill larger, over 33 mm. .... *U. m. magnirostris*, p. 42

(19) * Urocissa melanocephala melanocephala.

THE CHINESE RED-BILLED MAGPIE.

Coracias melanocephalus Lath., Ind. Orn., i, p. 170 (1790) (China).

Vernacular names. None recorded.

Description. Head, neck and breast black; a large patch on the nape, continued down the back lavender- or pale blue-grey, and feathers of the fore crown tipped with the same colour; lower plumage greyish white with a bluish sheen; under tail-coverts the same, but bluer and with a black band at the tips of the feathers with a greyish-white subterminal band; tail azure-blue, broadly tipped with white and all but the central pair of feathers with a broad subterminal band of black; wings dull blue-brown, the primaries edged with brighter blue and brown on the inner webs; the inner secondaries blue on both webs.

Colours of soft parts. Iris brown or red-brown; bill and feet coral-red to crimson, claws horny.

Measurements. Total length about 550 mm.; wing 180 to 200 mm.; tail 375 to 425 mm.; tarsus about 45 mm.; culmen about 32 to 33 mm.

Distribution. China and Yunnan. A bird from the South Shan States, perhaps from the extreme East, seems referable to this subspecies.

Nidification. In Chihli, La Touche took its nests and eggs in May. He describes them as having a clayey-brown ground-colour, very heavily marked. Two clutches sent to me are green eggs, very small, about 29×24 mm., and just like Koels' eggs. There may possibly be some mistake about them. The breeding season seems to be May.

Habits. These appear to be similar to those of our Indian birds.

(20) Urocissa melanocephala occipitalis.

THE RED-BILLED BLUE MAGPIE.

Psilorhinus occipitalis Blyth, J. A. S. B., xv, p. 27 (1846) (N.W. Himalayas).
Urocissa occipitalis. Blanf. & Oates, i, p. 26.

Vernacular names. *Nilkhant* (at Mussoorie); *Digg-Dal* (Simla).

Description. Similar to *U. m. melanocephala*, but can be distinguished at a glance by its *white* nape-patch. The back is more purple, with a blue sheen rather than lavender-brown.

Colours of soft parts and **Measurements** much the same as in the preceding bird.

---

* *Corvus erythrorhynchus* Gmel., Syst. Nat., i, p. 372 (1788) is preoccupied by Boddaert, Tabl. Pl. Enlum., p. 38, 1783.

Distribution. N.W. Himalayas through Nepal and Sikkim to Tibet.

Nidification. This bird breeds commonly over a great portion of the Himalayas in the north-west at elevations between 5,000 and 10,000 feet. The nest is a roughly made cup of twigs and coarse roots lined with finer roots and fern rachides, and generally placed some 10 to 20 feet from the ground in a small tree in evergreen forest. The eggs, which number three to six, vary very much in colour. The ground ranges from a very pale yellowish stone-colour to a darkish, rather reddish stone-colour; rarely there is a faint green tinge but this is quite exceptional. The markings consist of small specks and blotches, or all small irregular blotches, of various shades of brown, sienna or reddish brown, with a few underlying ones of pale sienna and purple. As a rule they are richly marked handsome eggs but are not, as they have often been described, like those of Magpies except in general character. They measure about 33·9 × 23·9 mm.

Habits. This Blue Magpie is found in small parties, probably consisting of the parent birds and their last brood. They keep much to evergreen forest at elevations between 5,000 and 12,000 feet, descending lower in the winter but never to the plains as does the next bird. Their flight is slow and undulating and they are rather noisy birds, especially during the breeding season. According to Col. Rattray, they are much given to feeding on the ground. Like all Magpies they are said to be addicted to stealing eggs and young of other birds.

(21) Urocissa melanocephala magnirostris.

THE BURMESE RED-BILLED BLUE MAGPIE.

Psilorhinus magnirostris Blyth, J. A. S. B., xv, p. 27 (1846) (Ya Ma Ding Mt.).
Urocissa occipitalis. Blanf. & Oates, i, p. 26.

Vernacular name. *Hnet-daw-pya* (Burmese).

Description. Differs from *occipitalis* in having a darker back, more suffused with purple-blue, and it also differs both from that bird and from *melanocephala* in having no white tips to the primaries.

Colours of soft parts as in *melanocephala*.

Measurements. This is a slightly larger bird than *occipitalis*, with a wing of about 200 to 210 mm. and a much larger bill, 36 to 37 mm.

Distribution. Hills south of the Brahmaputra, Manipur and Burma to Siam. It is very rare in the Khasia, N. Cachar and Manipur Hills, but more common in the Naga Hills and comparatively common in the Chin and Kachin Hills, West Shan States and North Siam.

Nidification. Similar to that of *occipitalis*, but the eggs are quite different. The ground-colour seems always to be a very pale salmon or pink stone-colour and the marks consist of light reddish blotches and freckles over the whole surface, with numerous others underlying them of pale neutral tint. Eggs taken by Col. Bingham and by Messrs. Hopwood, Mackenzie and Harington were all of this description and I have seen none of *occipitalis* anything like them. The full clutch numbers three to six.

The breeding season is March to April in Lower Burma, April and May in Upper Burma.

Habits. This bird is said to come right down into the plains in winter and even to breed at very low elevations. In Assam and Northern Burma it keeps to the higher ranges and is seldom found below 5,000 feet.

They are said to keep much to the deciduous forests in Burma, but in Assam haunt rhododendron, oak and mixed evergreen forests.

Urocissa flavirostris.

Key to Subspecies.

A. Under parts a rather dark lilac .... *U. f. flavirostris*, p. 43.
B. Under parts almost pure white .... *U. f. cucullata*, p. 44.

(22) Urocissa flavirostris flavirostris.

THE YELLOW-BILLED MAGPIE.

Psilorhinus flavirostris Blyth, J. A. S. B., xv, p. 28 (1846) (Darjeeling).
Urocissa flavirostris. Blanf. & Oates, i, p. 27.

Vernacular names. *Tying-jongring* (Lepcha); *Pianging-jabring* (Bhutea).

Description. Head, neck and breast black, the nape white and the feathers of the crown tipped white; back, scapulars, rump and upper tail-coverts purplish ashy, the last tipped black and with a narrow pale band in front of the black; wing-coverts, the outer webs of the primaries and outer secondaries and the whole of the inner secondaries purplish blue; all the quills tipped white, the earlier primaries whitish on the terminal half of the outer web; tail blue with a broad white tip and all but the central pair of feathers with a subterminal black band; lower plumage from the breast downwards lilac tinged with purple.

Colours of soft parts. Iris bright yellow; bill pale wax-yellow to a strong wax-yellow; legs and feet bright orange-yellow.

Measurements. Length about 630 to 650 mm.; wing from 178 to 190 mm.; tail up to 470 mm.; culmen about 65 mm.

The female is similar to the male but generally smaller, wing 170 to 180 mm. and the iris is a dull blue-brown.

Distribution. Bhutan, Sikkim and hills N. of the Brahmaputra, probably Eastern Nepal. Chin Hills.

Nidification. I have one egg of this race from Chambi, north of Sikkim, taken from the usual twig nest at an elevation of some 9,000 or 10,000 feet. The egg is erythristic and almost certainly abnormal. The ground-colour is a very pale cream and the markings are bright reddish brown with others underlying of pale neutral tint. It measures 32·0 × 22·9 mm. and was taken on the 7th May.

Habits. These probably do not differ from those of the better known Western form but it may be a bird of higher elevations, as my collectors assured me they met with it in Chambi in Tibet at about 11,000 feet. It is found at 6,000 to 8,000 feet round about Darjeeling and keeps much to the evergreen forests.

A form of this Magpie extends well into Burma, but the only skin I have seen thence differed in many respects from the normal type, and further material may prove it to be a new subspecies.

(23) Urocissa flavirostris cucullata.

The Western Yellow-billed Magpie.

Urocissa cucullata Gould, B. of A., v, pl. 51 (1861) (Kulu Valley).

Vernacular names. None recorded.

Description. Similar to the last but altogether a paler bird, and more especially so in the lower parts, which are almost pure white with scarce a tinge of lilac.

Distribution. N.W. Himalayas and W. Nepal.

Nidification. This Magpie breeds wherever found above 5,000 feet. It is common at Simla and again in the galis in the Murree Hills, where Rattray, Buchanan and others have taken many nests. The breeding season appears to be May but Major Lindsay Smith took one nest as late as the 15th July. It lays three or four eggs and both these and the nests are much like those of the Red-billed Magpie. As a whole, however, the eggs are duller and not so boldly marked. They measure 33·8 × 23·1 mm. (60 eggs) and do not differ in shape or texture from those of *occipitalis*.

Habits. This Magpie, like the red-billed bird, haunts principally evergreen forests and heavy jungle. It is equally omnivorous and equally an enemy to small mammals, unfledged young of other birds, and to insects of all kinds. It eats fruit greedily in captivity and probably also in a wild state. It is a shy and rather retiring bird and is never found in the vicinity of villages and cultivation. The call is very harsh and penetrating, and during the breeding season is freely indulged in.

Genus CISSA, Boie, 1826.

The genus *Cissa* contains, among others, two Indian Magpies of very beautiful plumage. They differ from the Magpies of the genus *Urocissa* in having a much shorter tail and the eyelids wattled at the edges, a feature which is very distinct in life and generally visible in some degree in dry skins.

Jerdon, very properly, placed this bird between *Urocissa* and *Dendrocitta*, but wrongly called it a Jay. Oates, in view of its long tail and bright coloration, more correctly termed it a Magpie, a name which is now generally accepted.

The Magpies of this genus are forest birds of shy habits, feeding both on trees and low bushes and sometimes on the ground. In the construction of their nests they resemble *Urocissa* and not *Pica*. They have red bills.

Davison has mentioned (S. F. vi, p. 385) that the habits of these birds closely accord with those of *Garrulax* but the resemblance is not very striking, although it is a curious fact that in structure these two genera also possess certain affinities.

Key to Species.

A. Head and neck green .... *C. c. chinensis*, p. 45.
B. Head and neck chestnut .... *C. ornata*, p. 46.

(24) Cissa chinensis chinensis.

THE GREEN MAGPIE.

Coracias chinensis Bodd., Tabl. Pl. Enl., p. 38 (1783) (China).
Cissa chinensis. Blanf. & Oates, i, p. 28.

Vernacular names. *The Green Jay*, Jerdon ; *Sirgang* (Beng.); *Chap-ling-pho* (Lepcha); *Rab-ling-chapa* (Bhutea); *Pilitel* (Dafla Hills); *Lil Sorai* (Assamese); *Dao-gatang-lili* (Cachari).

Description. Head and neck greenish yellow; general body plumage green; lores and a band through each eye meeting on the nape, black; cheeks, sides of neck and whole lower plumage paler green; tail green, the central feathers tipped with white, the others tipped with white and with a subterminal black band; lesser wing-coverts green, the other coverts red; quills brown on the inner webs, red on the outer; the inner secondaries tipped with pale blue and with a band of black in front of the tips.

Colours of soft parts. Iris blood-red, pale blue-brown in young birds; bill deep coral-red; legs coral-red; claws horny red; eyelids yellowish brown, the edges red.

Measurements. Total length about 370 to 380 mm.; wing about 150 mm.; tail about 200 mm.; tarsus about 40 mm.; culmen about 37 mm.

The plumage of this bird in ill-health, in captivity and after death changes greatly; the yellow pigment all evaporates, leaving

the bright green a dull blue whilst the red also fades greatly, young birds occasionally have the whole lower parts almost white and in some adults the green is partially replaced by bright azure-blue.

Distribution. Himalayas from the Jamna Valley to the extreme east of Assam, North and South of the Bramaputra, Eastern Bengal, Burma, Shan States and Northern Siam.

Nidification. The breeding season in the Himalayas commences in the last few days of March and continues through April and May, a few birds laying in June and even in July but these latter may be second broods. They build cup-shaped nests of twigs, leaves, grass, roots and bamboo-leaves, lined with roots and placed on a high bush, small sapling or a clump of bamboos. The eggs number from four to six, in Burma often only three and are very magpie-like in their general appearance, but more grey and *not* green in general tone. Here and there a rather reddish clutch may be found and even more rare, a clutch that is almost white. They measure on an average for 200 eggs 30·2 × 22·9 mm.

This Jay breeds at all elevations from the foot-hills to nearly 4,000 feet, but is not common above 2,500 feet.

Habits. This beautiful Magpie is an inhabitant of low-level, evergreen forests and heavy jungle, but may also be found in bamboo-jungle and the more dry, deciduous forests, such as oak, etc. In Burma they seem to be more often found in dry open parts than in the heavier evergreen cover. Their name "Hunting Jay," or "Hunting Magpie," is well applied, as they are determined hunters of big insect life and of small unfledged birds, etc., and for their quarry they will regularly quarter the country they work over. They feed alike on high trees, scrub-jungle and actually on the ground itself. Their notes are very harsh and strident and they are rather noisy birds although shy and wild.

(25) Cissa ornata.

The Ceylonese Magpie.

Pica ornata Wagler, Isis, 1829, p. 749 (India Orientali).
Cissa ornata. Blanf. & Oates, i, p. 29.

Vernacular names. *Kahibella* (Ceylon).

Description. Whole head, neck, upper back and upper breast rich chestnut: remainder of the body plumage bright blue, suffused with cobalt next the chestnut of the neck; tail blue tipped with white and subterminally with black; wing-coverts brown, more or less margined and suffused with blue; quills chestnut on the outer webs, black on the inner, changing to blue on the inner secondaries; thighs dusky purple.

Colours of soft parts. Iris light brown to dark brown; eyelid deep red; orbital skin somewhat paler; bill, legs and feet coral-red, claws more horny and yellowish at their bases.

Measurements. Total length about 400 to 420 mm.; tail about 235 to 255 mm.; wing about 155 to 170 mm.; tarsus about 40 mm.; culmen about 37 mm.

Distribution. Ceylon only. The type-locality must be restricted to Ceylon.

Nidification. According to Legge, the breeding season of the Ceylon Magpie is December to February but eggs collected for me by Mr. J. E. Jenkins were taken in February and March and two clutches purchased with the skins of the old birds from Lazarus, a small dealer in Slave Island, were both taken in April.

The nest is said to be like that of the preceding bird and to be in tall bushes in evergreen jungle. The eggs are large replicas of those of *Cissa chinensis*, measuring about 32·2 × 23·2 mm.

Habits. Apparently similar to those of the Indian Green Magpie; Legge describes it as haunting evergreen forest up to at least 7,000 feet but also found it in similar forest in the foot-hills. It is a noisy bird, uttering its discordant notes both when perching and flying, so that but for its keeping to very dense cover its voice would have led long ago to its extermination by the plume-hunter.

Genus **DENDROCITTA** Gould, 1833.

In the Tree-pies we have a collection of birds which are closer to *Pica* than to either *Urocissa* or *Cissa*, inasmuch as they have black bills and very numerous stiff, but somewhat short, bristles completely concealing the nostrils. The bill, however, is short, with the commissure greatly curved and in one species, *D. bayleyi*, the tail approaches the next genus in structure, the central tail-feathers being gradually enlarged throughout their length, not suddenly at the tip as in *Crypsirhina*.

The Tree-pies are sociable, associating in small flocks and they are arboreal, seldom descending to the ground. They have a series of clear metallic notes, which sound very pleasantly in the jungle. They construct large nests, generally in trees, and lay eggs which are less Corvine in appearance than those of the true Magpies. Their food consists of both fruit and insects.

Key to Species.

A. Tail ashy with black on terminal half.
- *a.* Crown brown, abdomen rufous .... *D. rufa*, p. 48.
- *b.* Crown black, abdomen and hind neck white .... *D. leucogastra*, p. 51.
- *c.* Crown black, abdomen and hind neck ashy .... *D. sinensis*, p. 52.

B. Tail entirely black.
- *d.* No white spot on wing .... *D. frontalis*, p. 54.
- *e.* With a white wing-spot .... *D. bayleyi*, p. 55.

Dendrocitta rufa.

This species extends over a very wide area and, as might be expected, varies greatly in different portions of its range, though their variations have until now been almost entirely overlooked.

Lanius rufus of Linné *, the name which has generally been accepted as applicable to this bird, cannot be used as it is pre-occupied by him in an earlier page of the same work. Curiously enough, however, Latham * independently named it *Corvus rufus* a few years later from a bird obtained on the Malabar coast, so the name *rufus* will, therefore, still hold good.

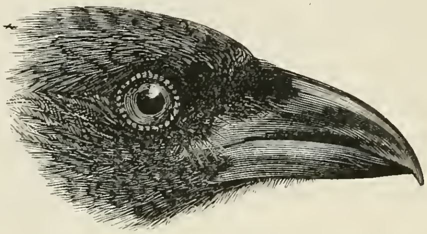


Fig. 11.—Head of *D. rufa rufa*.

Key to Subspecies.

A. Colours of head and back contrasting strongly.	
a. Lighter both above and below and not nearly so richly coloured	*D. rufa rufa*, p. 48.
b. Darker and more richly coloured above and below	*D. r. vagabunda*, p. 50.
B. Colours of head and back blending with one another.	
c. Tail 195 to 241 mm.; dark dull plumage.	
a'. Darker, more brown	*D. r. saturatior*, p. 51.
b'. Paler and redder	*D. r. kinneari*, p. 51.
d. Tail 242 to 287 mm.; pale dull plumage	*D. r. sclateri*, p. 50.

(26) Dendrocitta rufa rufa.

THE INDIAN TREE-PIE.

Corvus rufus Latham, Ind. Orn., p. 161 (1790) (Malabar Coast).
Dendrocitta rufa. Blanf. & Oates, i, p. 30.

* *Lanius rufus* Linné, Syst. Nat., i, 1766.
Corvus rufus Lath. Ind. Orn., p. 161, 1790.
The description given is very poor, but it is founded on Sonnerat's plate, vol. ii, p. 161. 'Voyage de Sonnerat,' and cannot be mistaken. Although called "de Chine" it was apparently obtained on the Malabar Coast. On p. 171 Latham describes *C. vagabunda* and here lays stress on the black head and red back, evidently having obtained a N.E. Indian bird, possibly from the vicinity of Calcutta.

Vernacular names. *Mahtab* and *Chand* (Sind); *Gokurayi*, *Konda-kati-gada* (Tel.); *Mootri* (Lucknow); *Maha-lat* (Hindi).

Description. The whole head and neck with the upper breast, sooty-brown; remainder of the plumage fulvous or reddish fulvous, darker on the back and scapulars; wing-coverts greyish-white; wing-quills dark brown, the outer webs of the inner secondaries grey; tail pale ashy-grey, darkest at the base, broadly tipped with black.

Colours of soft parts. Iris brown to red-brown; bill dark slaty horn-colour, albescent at the base; mouth flesh-colour; eyelids plumbeous; legs dark brown, claws horn-colour.

Measurements. Length from 365 to 450 mm., according to length of tail which varies from 193 to 257 mm., in one case actually 305 mm.; wing from 137 to 159 mm., and in the one case 177 mm.; tarsus about 33 mm.; culmen about 28 mm.

The young are duller in colour than the adults, the head is lighter brown and the lateral tail-feathers are tipped with white or buffy-white.

Distribution. The whole of Southern India, North to, and including, Orissa; West to Sind, Punjab and Afghanistan and thence East to the South of Kashmir, Simla Hills and Garhwal.

Nidification. In the southern part of their range these Magpies breed in February and March, whilst further north they breed principally in May and June. As, however, with so many common birds, their breeding extends over a prolonged period and eggs are laid both later and earlier than the above months. The nest is a rather untidy, but not very bulky, affair of twigs, roots and other material, carelessly interwoven and lined with roots and sometimes a scrap or two of wool. Generally they are placed well up in trees of some size, but often in thorn hedges, Bér bushes or cactus clumps.

In the north the birds lay three to five eggs, most often four, but in the south they lay fewer and generally only two or three. The majority are of two distinct types: one pale greenish in ground-colour with blotches and spots of light and dark grey-brown; the other pale reddish white or salmon-colour with blotches of reddish and dark brown and others, underlying, of lilac and neutral tint.

150 eggs average 29·2 × 21·7 mm.

Habits. This Magpie is more of a plains than a mountain bird, but in some parts of the Himalayas it is said to wander up to as high as 7,000 feet and to breed at this height. It is a sociable, noisy bird but many of its notes are very musical, though it can give vent to most unmusical discords at times. Its usual call is an oft-repeated "bob-a-link bob-a-link" as it flies from one bush to another, the cry being repeated by each member of the flock in turn. They are practically omnivorous and are arrant egg and nestling thieves during the breeding seasons of the smaller birds.

Their flight is dipping and consists of alternative flappings of the wings with short spells of sailings with the wings stiffly outspread.

This Magpie is everywhere one of the most familiar of birds, frequenting gardens and the outskirts of towns and villages and not penetrating into the wilder parts.

The type locality of *rufa* was certainly somewhere in South India, probably Malabar and therefore that place may be now designated.

(27) Dendrocitta rufa vagabunda.

The Bengal Tree-pie.

Coracias vagabunda Lath., Ind. Orn., p. 171 (1790) (India).

Vernacular names. *Bobalink* (Europeans Bengal); *Kotri* (Hindi in Beng.); *Takka-chor*, *Handi-chacha* (Bengali); *Kash-kurshi* (N. Cachar); *Khola-Khoa* (Assam.); *Dao-ka-link* (Cachari).

Description. Differs from the last in being more richly coloured; the head is blackish and the red of the back is almost chestnut and the fulvous red below also much richer.

Colours of soft parts as in *rufa*.

Measurements. Wing 145 to 172 mm.; tail 209 to 253 mm.

Distribution. Northern India from Garhwal to Eastern Assam, Behar, U. Provinces, Bengal and Manipur.

The type locality may be restricted to Calcutta.

Nidification. Similar to that of the last bird and neither nest nor egg can be distinguished.

Habits. An equally confiding, common bird, being found in flocks in gardens and parks in the centre of Calcutta and haunting the immediate vicinity of every town and village.

(28) Dendrocitta rufa sclateri, subsp. nov.

The Chin Hills Tree-pie.

Description. Similar to *D. rufa rufa* but with the whole plumage very pale and washed out and the dark grey of the head gradually merging with the pale dull rufous-brown or rufous-grey of the back.

Colours of soft parts as in the rest of the subspecies.

Measurements. Wing 142 to 161 mm.; tail 242 to 287 mm., generally well over 260 mm.

Distribution. Chin and Kachin Hills.

Nidification and Habits. Nothing recorded.

Type. No. 1905—9. 10. 6. Brit. Mus. Coll., Mt. Victoria, 1,600 feet.

(29) Dendrocitta rufa kinneari, subsp. nov.

THE BURMESE TREE-PIE.

Description. Similar to the last but much darker both above and below, the colour of the head and back blending with one another, the red of the back dull and brownish.

Measurements. Wing 137 to 151 mm.; tail 195 to 241 mm.

Distribution. The whole of Burma south of the Chin and Kachin Hills down to N. Tenasserim and east into Yunnan, Shan States and West Siam.

Nidification. Similar to that of *D. rufa rufa*.

Habits. The Burmese Tree-pie, though equally tame and confiding in its ways, is not so exclusively confined to open country in civilization as is the Indian Tree-pie and it may also be found in thin forest and the more open parts of evergreen forest.

Type. ♀, No. 87—11. 20. 213 Brit. Mus. Coll. Toungoo.

(30) Dendrocitta rufa saturatior.

THE TENASSERIM TREE-PIE.

Dendrocitta vagabunda saturatior Ticehurst, Bull. B. O. C., xlii, p. 56 (1922) (Kaukareyet, Amherst).

Description. Similar to that of the Burmese Tree-pie but still darker and browner, the back having the red hardly visible at all.

Colours of soft parts and **Measurements** as in the Burmese race.

Distribution. Peninsular Siam and Burma but how far its limits extend cannot at present be defined.

Nidification and **Habits.** Nothing recorded.

(31) Dendrocitta leucogastra.

THE SOUTHERN TREE-PIE.

Dendrocitta leucogastra Gould, P. Z. S., 1833, p. 57 (Malabar Coast); Blanf. & Oates, i, p. 31.

Vernacular names. *Neela val Kaka* (Tel.).

Description. Forehead, anterior half of crown, sides of the head, chin, throat, upper breast and thighs black; posterior crown to hind neck, lower breast to vent and upper tail-coverts white; back, scapulars and rump chestnut-bay; under tail-coverts chestnut; wings black, the primaries with a large patch of white at their base; central tail-feathers grey, broadly tipped black; the next pair half grey and half black and the others nearly entirely black.

Colours of soft parts. Bill black, legs and feet duller black; iris brown to red-brown.

Measurements. Length about 475 mm.; tail 250 to 300 mm.; wing about 140 to 155 mm.; tarsus about 30 mm. and culmen about 25 mm.

Distribution. Southern India from South Travancore to the Wynaad. McMaster records a specimen from Chikalda in the Gawilgarh Hills, apparently a straggler only. It keeps principally to the western coast.

Nidification. Nest and eggs of this bird were taken by Bourdillon in March and by Mr. J. Stewart from February to May and again in August, and the latter gentleman informs me that they breed twice in the year. The nest is similar to that of the preceding bird and is placed in small trees and high bushes but it is always built in heavy forest and never near villages. Three eggs only are most often laid but four is not uncommon and sometimes two only are incubated. In general appearance they cannot be separated from those of *himalayensis*, described below.

Fifty eggs average 28·2 × 20·5 mm.

Habits. Found from the foot of the hills up to about 5,000 feet, generally below 3,000 feet. The flight, voice and general habits are like those of the Common Indian Tree-pie but this bird is essentially an inhabitant of heavy forest and shuns the immediate vicinity of mankind.

Dendrocitta sinensis.

Key to Subspecies.

A. Central tail-feathers pale grey, with no black tip .... *D. s. sinensis.*
B. Central tail-feathers darker grey, with a black tip.
  a. Paler and brighter in colour; vent and centre of abdomen almost white. *D. s. himalayensis*, p. 52.
  b. Darker and duller in colour; vent and centre of abdomen ashy ...... *D. s. assimilis*, p. 53.

(32) Dendrocitta sinensis himalayensis.

THE HIMALAYAN TREE-PIE.

Dendrocitta himalayensis Blyth, Cat., p. 92 (1865) (Himalayas); Blanf. & Oates, i, p. 32.

Vernacular names. *Kokia-Kak* (at Mussoorie); *Karrio-pho* (Lepcha); *Karriah-ban* (Bhutea); *Kok-long-ah* (Assam); *Dao-ka-link* (Cachari); *Inrui-ko-kink* (Naga).

Description. Forehead, lores and feathers above the eye black; sides of the head, chin and throat dark sooty-brown, fading and spreading over the sides of the neck and breast; crown of the head, nape and upper back ashy; back and scapulars clear brownish buff; rump and upper tail-coverts ashy; wings and their coverts

black, all the primaries but the first two with a patch of white at their base, forming a conspicuous spot; central pair of tail-feathers ashy for two-thirds of their length, then black; the others all black except their extreme bases, which are ashy; abdomen and flanks cinereous; thighs brown; vent and under tail-coverts chestnut.

Colours of soft parts. Bill black; irides reddish brown; feet brownish black, claws horny black.

Measurements. Total length about 400 mm.; tail from 200 to 210 mm.; wing from 132 to 140 mm.; tarsus about 30 mm.; culmen about 32 mm.

The young are paler and duller, the feathers of the upper part are tipped with buff, the under tail-coverts and vent are reddish brown and the legs are dull leaden black and the iris blue-brown.

Distribution. Throughout the Himalayas from the Sutlej Valley, through Assam and throughout the Burmese hills as far as, but not including, Tenasserim.

Nidification. The Himalayan Tree-pie breeds during April, May and June at all heights from the level of the plains to at least 7,000 feet. It makes a nest like that of *D. rufa rufa* and builds it in similar situations, but selects forest, either light or heavy, well away from habitations for this purpose. The nest is often much smaller and more fragile than that of the Common Tree-pie and I have known it placed in quite low bushes. The eggs number from three to five, the latter number being exceptional. The ground-colour may be any tint of pale stone, very pale cream or pale reddish, and more rarely pale greenish white. The markings are of pale sienna and grey-brown, darker richer brown, or dark reddish brown; typically the markings are richer and bolder than they are on the eggs of the Common Tree-pie and are often confined to the larger end in a ring or cup. Very few of its eggs could be confounded with those of that bird.

Two hundred eggs average 28·8 × 20·1 mm.

Habits. The Himalayan Tree-pie is found all over the plains of Assam and also in the plains close to the foot-hills of the Dooars and Nepal Terai and ascends everywhere up to 5,000 feet and often considerably higher. They are forest birds and do not care for the vicinity of villages and houses but otherwise they are much like *r. rufa* in their ways. They are equally noisy but not, I think, so musical, and like the rest of the family, are great persecutors of small birds during the breeding season.

(33) Dendrocitta sinensis assimilis.

THE BURMESE HILL TREE-PIE.

Dendrocitta assimilis Hume, S. F., v, p. 117 (1877) (Muleyit); Blanf. & Oates, i, p. 32.

Vernacular names. None recorded.

Description. This subspecies is a rather darker, duller bird

than the last; the under parts are more uniform in colour and the centre of the abdomen less white. The cheeks, ear-coverts and throat are a paler brown.

Colours of soft parts and **Measurements** as in *D. s. himalayensis* but the bill more massive.

Distribution. Burma as far north as the Chin Hills and Shan States and to the west the Pegu and Arrakan Yomas.

Nidification similar to that of *D. s. himalayensis.*

Habits. A hill bird confined to elevations principally between 1,000 and 4,000 feet, but descending to the foot-hills in the winter. In the summer it is found at least up to 6,000 feet, probably higher.

(34) Dendrocitta frontalis.

THE BLACK-BROWED TREE-PIE.

Dendrocitta frontalis McClell., P. Z. S., 1839, p. 163 (Assam); Blanf. & Oates, i, p. 33.

Vernacular names. *Hamshi-bon* (Lepcha); *Kolio-Ko* (Bhutea); *Dao-ka-link gaschim* (Cachari).

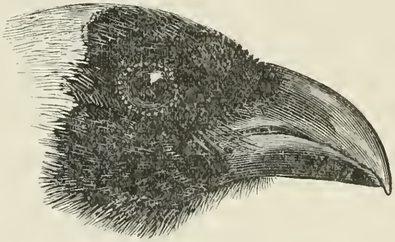


Fig. 12.—Head of *D. frontalis.*

Description. Forehead, the greater part of the crown, sides of the head, chin, throat, fore neck, tail, wing-quills and the primary-coverts black; the remainder of the wing ash-grey; nape, hind neck, upper back, sides of the neck, breast and upper abdomen pale grey; lower back, scapulars, rump, upper tail-coverts, lower abdomen, thighs and under tail-coverts chestnut, the thighs tinged with brown.

Colours of soft parts. Bill and legs black; irides red-brown, often very bright.

Measurements. Total length about 370 to 380 mm.; tail 245 to 255 mm.; wing 120 to 126 mm.; tarsus about 30 mm.; culmen about 25 mm.

Distribution. Himalayas from Eastern Nepal to the extreme east and south of Assam into the higher hills of Manipur, but apparently not into Lushai or Chin Hills.

Nidification. This bird breeds freely in the N. Cachar, Khasia and Naga Hills east as far as Lakhimpur but it seems to be much rarer north of the Brahmaputra. I have not personally found it breeding much below 4,000 feet but the Nagas brought in nests and eggs to Dr. Coltart from much lower elevations in Lakhimpur. The nest is a small, neat replica of that of the Himalayan Tree-pie but is much more compact and well put together. They are often built quite low down in scrub-jungle, undergrowth and even in high weeds and small bushes. The breeding season lasts from the end of April into July.

The eggs also are similar to those of the last bird but are more handsome and nearly always much more profusely marked. They measure about 27·0 × 19·9 mm.

Habits. The Black-browed Tree-pie is essentially a bird of heavy evergreen forest, though it affects the more open glades on the outskirts of these. It goes about in small parties of half-a-dozen or so, and has a very musical note rather like, yet easily distinguishable from, the call of its plains' cousins. Like these birds also it has many discordant notes, though it is not nearly as noisy a bird. It does not appear to be a regular egg and young-bird thief, but doubtless despises neither if fate throws them in its way. It eats fruits, seeds and insects but chiefly the last. It is common between 4,000 and 7,000 feet and descends in the winter still lower, coming into the plains themselves in Eastern Assam but not elsewhere.

(35) Dendrocitta bayleyi.

The Andaman Tree-pie.

Dendrocitta bayleyi Tytler, J. A. S. B., xxxii, p. 88 (1863) (Andamans); Blanf. & Oates, i, p. 34.

Vernacular names. None recorded.

Description. The feathers round the base of the bill black; the remainder of the head, neck, upper back and upper breast dark bluish ashy; lower back, scapulars and rump pale rufous-olive; upper tail-coverts bluish ashy; lower breast rufescent ashy; abdomen, vent and under tail-coverts chestnut; tail and wing black, the latter with a large white patch on the primaries and outer secondaries.

Colours of soft parts. Bill, legs, feet and claws black, the sides plumbeous grey; iris bright yellow, in some rich golden yellow. (*Hume.*)

Measurements. Total length about 350 to 360 mm.; wing 120 to 126 mm.; tail from 180 to 230 mm., generally about 210; tarsus and bill from about 25 mm.

Distribution. Andamans only.

Nidification. Nothing on record, but I have 13 eggs collected for me by a Pathan convict which can all be matched by eggs of

himalayensis. They average about 28·5 × 21·9 mm. and were taken in April and March near Port Blair.

Habits. Davison obtained this bird near Port Blair and more commonly at Mount Harriet and Aberdeen. He observes that it is a forest bird and never ventures away from the cover of large trees; also that it never descends to the ground. Oates did not obtain it either on the Great Cocos or on Table Island.

Genus **CRYPSIRHINA** Vieill., 1816.

With this genus we come to the end of the true Magpies or Long-tailed Crows. The members of the present genus are small and are characterized by a tail of peculiar structure, the central pair of feathers being spatulate at the ends. The bill is small and the nostrils are concealed by a mass of fine velvety plumes, which also surround the base of the bill.

The Racket-tailed Magpies are quite arboreal and in the course of many years' observation Oates never saw one of them on the ground.

Key to Species.

A. All tail-feathers black .... *C. varians*, p. 56.
B. Central tail-feathers black, outer feathers grey. *C. cucullata*, p. 57.

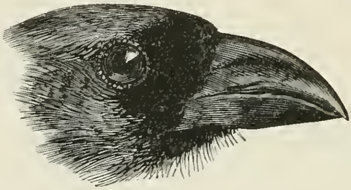


Fig. 13.—Head of *C. varians.*

(36) Crypsirhina varians.

The Black Racket-tailed Magpie.

Corvus varians Lath. Ind. Orn. Suppl., xxvi, (1801) (Java); Blanf. & Oates, i, p. 35.

Vernacular names. *Ami-whine* (Burmese).

Description. The whole plumage metallic bronze-green, tinged with bluish on the head; wings brown, the outer webs of the primaries greenish, the other quills more or less entirely tinged with greenish; tail black, with the same tinge but with more sheen; forehead, round the eye and about the gape dull black, the feathers of a velvety texture.

Colours of soft parts. Iris blue; bill black, mouth flesh-colour; legs and claws black.

Measurements. Length about 310 to 330 mm.; wing about 110 to 116 mm.; tail from about 175 to 200 mm.; tarsus about 30 mm.; culmen about 23 mm.

Distribution. This fine little Magpie has its headquarters in Pegu, extending up the valleys of the Irrawaddy and Sittaung to some way north of Thayetmyo and Toungoo. To the west it extends to Bassein, south to Mergui and into Sumatra, Borneo and Java. To the east it extends to Siam, where it is very common in the south, and to Cochin China.

Nidification. The breeding season lasts from April, in which month Hopwood took eggs in Tavoy, through May and June to July, in which latter month Nurse took eggs in Pegu and Herbert found them breeding in Siam. The nest is a typical Magpie's nest, though without a dome. It is a shallow cup of fine twigs, roots and tendrils with a diameter of about 5″ to 6″ by 1″ deep internally and some 9″ in external diameter. It is generally placed in a thorny bush or tree 8 to 12 feet from the ground.

The eggs are two to four in number, typically Corvine in appearance, and average $24{\cdot}8 \times 18{\cdot}3$ mm.

Habits. The Racket-tailed Magpies are birds of comparatively open forest and light bush, tree, or bamboo-jungle. They eat both fruit and insects, and may be seen clinging to the outer branches of trees as they search the leaves and flowers for the latter. They are not gregarious, though sometimes two or three may be seen in company; their usual note is a not unpleasant metallic call, and they do not appear to possess the harsh notes so common to this group.

(37) Crypsirhina cucullata.

THE HOODED RACKET-TAILED MAGPIE.

Crypsirhina cucullata Jerdon, Ibis, 1862, p. 20 (Thayetmyo); Blanf. & Oates, i, p. 35.

Vernacular name. *Ami-whine* (Burmese).

Description. Whole head, chin and throat black; round the neck, next to the black, a ring of ashy white; the whole upper plumage, wing-coverts and inner secondaries vinaceous grey; lower plumage the same but rather more rufous; central tail-feathers black, the others the same colour as the back; primaries and their coverts black; outer secondaries black with ashy-white edges.

Colours of soft parts. Iris blue; eyelids plumbeous; bill black; legs and claws dark brown; inside of the mouth flesh-colour.

Measurements. Total length 300 to 315 mm.; tail 180 to 200 mm.; wing 102 to 108 mm.; tarsus about 26 to 27 mm.; culmen about 20 mm.

The young have the head brown; the central tail-feathers and wings are blackish brown and the general colour of the body plumage is less ashy and more vinaceous; the bill is black, with an orange gape and inside to the mouth; the eyelids are pale blue with orange edges.

This Magpie has the central tail-feathers narrower than in *C. varians* and more abruptly spatulate at their ends.

Distribution. Central and South Burma, Siam and N. Malay Peninsula. Harington obtained it as far North as Monywa and Pymmana on the Chindwin, and it extends East into West Central Siam. Wickham obtained it as far North as the foot of Mt. Victoria in the Chin Hills.

Nidification. Similar to that of *C. varians*, though the nests appear to be smaller and neater. The eggs are small replicas of those of that bird and measure 23·0 × 18·0 mm. Harington obtained its eggs in May.

Habits. Differ in no way from those of the Black Racket-tailed Magpie, but it seems to keep more exclusively to bamboo-jungle and scrub. It is a bird of the dry zone, and will not be found in those parts of Burma where the rainfall is very heavy.

Genus **PLATYSMURUS** Reich., 1760.

The genus *Platysmurus* contains two species, one of which is resident in Tenasserim whilst the other inhabits Borneo. In many ways this genus connects the typical Magpies and the typical Jays.

The bill is very much curved and shorter than the head and the bristles covering the nostrils are numerous and stiff but short. The feathers of the crown of the head are very harsh. The tail is of no great length but well graduated. The sexes are alike and the young resemble the adults.

(38) Platysmurus leucopterus.

THE WHITE-WINGED JAY.

Glaucopis leucopterus Temm., Pl. Col., No. 265 (1824) (Sumatra).
Platysmurus leucopterus. Blanf. & Oates, i, p. 37.

Vernacular names. None recorded.

Description. The whole plumage black; the terminal halves of the larger upper wing-coverts and a large patch on the exterior webs of some of the outer secondaries white; the forehead crested and the feathers stiff.

In some specimens the smaller wing-coverts are narrowly margined with white, and this probably means immaturity.

Colours of soft parts. Bill, legs, feet and claws black; irides lake-red to crimson. (*Davison.*)

Measurements. Length about 400 to 410 mm.; wing about 190 to 200 mm.; tail about 200 to 220 mm.; tarsus 35 to 38 mm; culmen about 35 mm.

Distribution. Tenasserim, S.W. Siam, Malay Peninsula and Sumatra.

Nidification. The nests were first obtained by Davison and again quite recently by Messrs. Hopwood and Mackenzie in Tenasserim. They are rough, heavy affairs of twigs, roots, etc., cup-shaped with a shallow internal hollow. They are placed in tall bushes, small trees or palms some 6 to 8 feet from the ground. The eggs number two or three and are exactly like big eggs of *Cissa chinensis*. They measure about 33·5 × 23·1 mm.

The breeding season appears to be March and April.

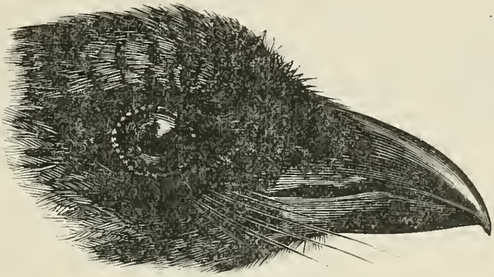


Fig. 14.—Head of *P. leucopterus.*

Habits. According to Davison "this species keeps entirely to the forests, going about usually in parties of from four to six. They have a deep, rolling, metallic note, which they continually utter as they move from tree to tree. I have never seen them on the ground; they probably get their food, which consists of insects, and, occasionally at any rate, of fruit, amongst the trees. They are excessively restless and always on the move, flying from tree to tree, generally at a considerable height and continually uttering their harsh, metallic call. They restrict themselves to the evergreen forests, never, that I am aware, coming into the gardens or open ground."

Hopwood says they are common about Tavoy and that they are not shy.

Genus **GARRULUS** Briss., 1760.

The genus *Garrulus* contains the True Jays, of which there are numerous species in Europe and Asia, three species and several subspecies being found within the limits of the Indian Empire. These Indian Jays are resident species but may be partially migratory to the extent of moving up and down the slopes of the mountains according to season.

The Jays are birds of bright plumage, the wing especially being marked with vivid blue. They are not exactly gregarious but often three or four are found together.

In the Jays the bill is strong, about three-quarters the length of the head and the commissure is straight. The nasal bristles are short and numerous, completely covering the nostrils. The tail is of medium length and slightly graduated.

G. lanceolatus has been separated generically under the name *Laletris* on account of its crested crown and more stiffened feathers of the throat. These characters are, however, only questions of degree and I see no reason to accept them as generic in the Jays when we discard far greater differences as of no value specifically in other birds.

Key to Species.

A. Tail blue barred with black .... *G. lanceolatus*, p. 60.
B. Tail all black.
  a. Forehead white, crown black or black and white .... *G. leucotis*, p. 61.
  b. Forehead and crown vinaceous like the back *G. bispecularis*, p. 62.

(39) Garrulus lanceolatus.

THE BLACK-THROATED JAY.

Garrulus lanceolatus Vigors, P. Z. S., 1830, p. 7 (Himalayas); Blanf. & Oates, i, p. 38.

Vernacular names. *Ban-sarrah* (of the Simla hillmen).

Description. Forehead, crown, nape, crest and sides of the head black; remainder of upper plumage vinous grey, brighter on the rump and upper tail-coverts; tail blue, barred with black, tipped with white and with a broad subterminal band of black; primaries and secondaries black, barred with blue on the outer web; the primaries narrowly, the outer secondaries broadly tipped white; the inner secondaries grey, with a subterminal black band and a white tip; lesser coverts vinous, the median and greater black; primary coverts almost entirely white; winglet barred with blue and tipped with white.

Chin, throat and foreneck black with white shaft-streaks, the black terminating in a patch of iron grey on the upper breast; remainder of the lower plumage and sides of the neck vinous grey, brighter than the back.

Colours of soft parts. Legs and feet livid flesh or slaty pink; claws more horny; bill slaty pink at base, yellowish at tip; iris red-brown, red or deep red-lake. The colour of the iris probably changes with age.

Measurements. Length about 225 to 235 mm.; wing 150 to 155 mm.; tail about 160 to 175 mm.; tarsus 32 to 34 mm.; culmen about 27 mm.

Distribution. The Himalayas from Chitral and Hazara to Nepal and the whole of Garhwal and Kashmir up to some 8,000 feet.

Nidification. Breeds from the middle of April to early June at heights between 4,000 and 8,000 feet, making a shallow cup-shaped nest of twigs and roots, more rarely of grass, lined with moss, fern rachides, or fine roots. It is generally placed in a small oak or other tree, 10 to 30 feet from the ground in thin forest. The eggs vary from three to six, generally four or five. In colour they vary from pale yellowish stone to pale greenish, finely stippled everywhere with olive-brown and, more seldom, with a few hair-lines of black. They measure about 28·6 × 22·6 mm.

Habits. The Black-throated Jay is a bird of forests but of the thinner more open parts, venturing often into comparatively unwooded tracts. Like the European Jay its voice is loud, harsh and penetrating, and it is a noisy bird, more especially in the mornings and evenings in the breeding season. It is omnivorous, eating fruit and insects, small mammals, birds and reptiles and other birds' eggs. Its flight is like that of its European cousin and it indulges in the same flappings and contortions when on the wing.

Garrulus leucotis.

Key to Subspecies.

A. Crown all black .... *G. l. leucotis*, p. 61.
B. Crown white, narrowly streaked with black .. *G. l. oatesi*, p. 62.

(40) Garrulus leucotis leucotis.

THE BURMESE JAY.

Garrulus leucotis Hume, P. A. S. B., 1874, p. 106 (Kaukaryit); Blanf. & Oates, i, p. 39.

Vernacular names. None recorded.

Description. Forehead and front of crown white, with brown shaft-streaks; anterior crown and crest black; lores, feathers under the eyes, ear-coverts, chin, throat and front of neck white; a broad moustachial streak black; back, rump and scapulars vinous brown, paler on the rump; breast the same as the back; abdomen and flanks paler vinous brown; upper and under tail-coverts and vent white; tail black, barred with ashy towards the base; lesser and median wing-coverts like the back; winglet, primary-coverts, the outer greater coverts and the outer webs of most of the secondaries on their basal halves, bright blue banded with black; remainder of greater coverts and quills black, the primaries with some portions of the outer web grey; the innermost secondary partially chestnut.

Colours of soft parts. Iris hazel-brown to dark brown or wood-brown; bill almost black with pale or whitish tip; legs horny white to dull flesh-colour, claws a little darker.

Measurements. Total length about 300 to 325 mm.; wing 165 to 177 mm.; tail about 130 mm.; tarsus about 45 mm.; culmen about 26 mm.

Distribution. The hills of Burma from the Kachin Hills in the north-east, through the Shan States, Karen Hills to Tenasserim.

Nidification. This bird breeds in great numbers all round about Maymyo, and its nests and eggs have been taken by many collectors. The nests are wide, untidy cups of twigs, grass and roots, and the eggs are like those of *G. lanceolatus* but very much larger, averaging about 33·0 × 23·0 mm. It appears to nest in communities. The breeding season commences in the end of March and lasts up to the end of May. Three to five eggs are laid, generally four.

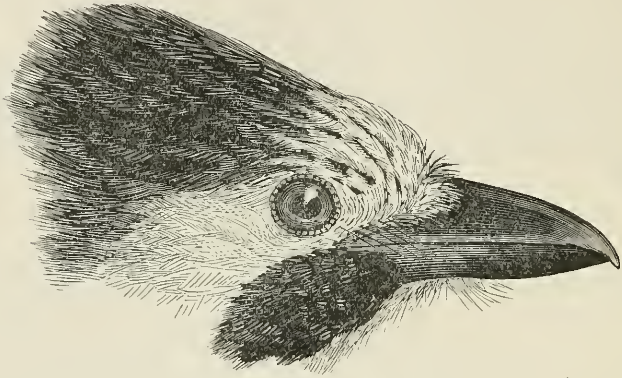


Fig. 15.—Head of *G. l. leucotis*.

Habits. Found principally between 4,000 and 7,000 feet, and keeping much to pine and dry deciduous rather than to evergreen forest; there is little otherwise in the habits of this Jay which calls for remark. Harington found it very common in the oak forests near Maymyo, and obtained six or seven nests close to one another in quite small patches of forest.

(41) Garrulus leucotis oatesi.

SHARPE'S JAY.

Garrulus oatesi Sharpe, Bull. B. O. C., v, p. 44, 1896 (Chin Hills).

Vernacular names. None recorded.

Description. Like the Burmese Jay but has the anterior crown and crest white, broadly streaked with black instead of wholly black.

Colours of soft parts and **Measurements** as in *G. l. leucotis*.

Distribution. Upper and lower Chin Hills right up to the borders of Manipur and Looshai and probably inside these countries also, though the Chindwin and Irrawaddy rivers may prove to be its west and eastern boundaries.

Nidification. This Jay breeds in the Chin Hills in April and probably May between 3,500 and 5,000 feet. Mr. J. M. D. Mackenzie describes a nest as "a shallow cup in a low tree in scrub jungle on a steep hillside. It was placed about 10 feet up and made entirely of roots with a few scraps of moss outside. It measured externally $6'' \times 2\frac{3}{4}''$, inside $4\frac{1}{2}'' \times 2''$."

The eggs are like those of the Burmese Jay but the few I have seen average smaller, being about 29·5 × 23·1 mm.

The hen sits very close and has literally to be driven from the nest.

Habits. Messrs. Hopwood and Mackenzie found this Jay fairly common in the Chin Hills, keeping to hillsides with oak and scrub forest. Voice, flight and habits generally are in no way distinguishable from other species of the same genus. They report this Jay as moving about fairly widely in the spring and autumn, visiting comparatively low valleys in the winter but always breeding at over 4,000 feet.

Garrulus bispecularis

Key to Subspecies.

A. The palest of all the forms. Throat vinaceous like head	*G. b. bispecularis*, p. 63.
B. Darker and browner and less vinaceous; throat and lower breast about the same colour	*G. b. interstinctus*, p. 64.
C. Still darker and browner; throat and breast concolorous	*G. b. persaturatus*, p. 65.
D. Above very rich red-vinaceous; throat and sides of head much paler; forehead faintly streaked	*G. b. haringtoni*, p. 65.
E. Above rich red-vinaceous; throat almost pure white and sides of head paler; forehead faintly streaked	*G. b. rufescens*, p. 65.

It is very doubtful whether the whole of the *Garruli* should not be treated as subspecies of the same species in so far as *leucotis* and *bispecularis* are concerned. *Haringtoni* in many ways links up the white-eared forms with the dark-eared ones but the breeding areas still require to be carefully worked out and, until this is done, it seems desirable to keep them apart.

The above key is a far from satisfactory one but may suffice to enable students who know whence their specimens come to identify them.

(42) Garrulus bispecularis bispecularis.

THE HIMALAYAN JAY.

Garrulus bispecularis Vigors, P. Z. S., 1831, p. 7 (Himalayas); Blanf. & Oates, i, p. 39.

I restrict the type-locality to *Murree*, Punjab.

Vernacular names. None recorded.

Description. A broad black moustachial band; lower part of rump, upper and lower tail-coverts, vent and thighs white; with these exceptions the whole plumage of the head, neck and body is a rich vinaceous fawn-colour; tail black, with some interrupted ashy bars near the base of the central pair of feathers; wings as in *leucotis*.

Colours of soft parts. Bill dusky; margins of eyelids dull brick-red; iris reddish brown; tarsi and toes pale pinkish fleshy; claws livid. (*Scully*.)

Measurements. Length about 300 mm.; wing 160 to 178 mm.: tail about 180 mm.; tarsus about 32 mm.; culmen about 26 mm.

Distribution. Western Himalayas from Cashmere to Nepal and Garhwal.

Nidification. Breeds in April, May and June, making a nest of twigs and roots, lined either with grass or with finer roots and sometimes having a little moss on the exterior. In shape it varies from a shallow to a deep cup some 6″ to 8″ in diameter and it is placed in a fork of some small tree, near the top. Chestnuts and oaks seem to be specially favoured. It breeds up to 7,000 feet or higher and sometimes as low as 3,000 feet.

The eggs number four or five and are like those of *lanceolatus* but more boldly speckled and often more reddish in the ground-colour and markings. They measure 27·5 × 21·4 mm.

Habits. The Himalayan Jay is a resident bird throughout the range between 3,000 and 7,000 feet, perhaps moving up and down a little in summer and winter. It haunts forest of all kinds, both evergreen and deciduous, and in general habits it closely resembles the Black-throated Jay.

(43) Garrulus bispecularis interstinctus.

THE SIKKIM JAY.

Garrulus bispecularis interstinctus Hartert, Nov. Zoologicæ, xxv, p. 430 (1918) (Darjeeling).

Vernacular names. *Lho-Karrio-pho* (Lepcha).

Description. Similar to the Himalayan Jay with the upper parts darker and more reddish brown. The throat is concolorous with the lower breast and upper abdomen.

Measurements. Wing 150 to 170 mm. (*Hartert*).

Distribution. Sikkim and probably all the hills north of the Brahmahputra as far as the Mishmi and Dafla Hills, where Dr. J. Falkiner obtained it.

Nidification and Habits. Nothing recorded.

(44) Garrulus bispecularis persaturatus.

THE KHASIA HILLS JAY.

Garrulus bispecularis persaturatus Hartert, Nov. Zoologicæ, xxv, p. 430 (1918) (Shillong).

Vernacular names. *Dao-flampu* (Cachari).

Description. The darkest and brownest of all the races.

Measurements. Wing 162 to 176 mm.

Distribution. Hills south of the Brahmaputra, but the limits still undefined. South of Manipur it is not found in the Chin Hills and east of the Naga Hills the country is still utterly unknown.

Nidification. Breeds in the Khasia Hills in May, during which month two nests were brought in to me with the parent birds. They were made of twigs, roots and tendrils and lined with finer roots and fern rachides; in shape broad cups about $10'' \times 4\frac{1}{2}''$. Both nests were placed in rhododendron trees 15 to 20 feet from the ground in mixed oak and rhododendron forest at about 6,000 feet.

The eggs are like those of the Himalayan Jay and average about $29{\cdot}0 \times 22{\cdot}5$ mm.

Habits. I found this bird more than once in N. Cachar in stunted oak forest at 5,000 to 6,000 feet but it was very rare; in the Khasia Hills it was generally to be found either in the pine-forests or in the patches of oak-forest just above the pines. In habits and manner it was very like the common European Jay, but much more shy and not so noisy.

(45) Garrulus bispecularis haringtoni.

RIPPON'S JAY.

Garrulus haringtoni Rippon, Bull. B. O. C., xv, p. 97 (1905) (Mt. Victoria, S. Chin Hills).

Vernacular names. None recorded.

Description. Similar to the Sikkim Jay, but throat whitish and sides of head and ear-coverts much paler. The crown is also distinctly, sometimes strongly, streaked with blackish.

Measurements. This is a large bird, the wing-measurements being 170 to 178 mm., so that in size as well as in colour it approaches the Burmese Jay.

Distribution. South Chin Hills and South Kachin Hills, where they seem to overlap with the Burmese Jay. A Jay which is found in the N. Shan States may be this or *leucotis*.

Nidification. The nest and eggs of this Jay were taken on Mt. Victoria but no details recorded.

Habits. Similar to those of the other Jays. It is said to keep much to pine-forests and to grass-covered hills with scattered oaks.*

* *G. b. rufescens*, the Yunnan Jay, is almost sure to occur within the Shan States and may be distinguished by the characters given in the key.

Genus NUCIFRAGA Briss., 1760.

The genus *Nucifraga* contains the Nutcrackers, birds of well-marked form and colour, two of which are found within Indian limits, inhabiting the higher part of the Himalayas where they are resident.

In the Nutcrackers the plumage is more or less spotted with white; the bill is straight, pointed and about as long as the head; the nasal bristles are short and stiff and completely cover the nostrils; but the tail is short and very little rounded.

Key to Species.

A. Rump and upper tail-coverts not marked with white .... *N. caryocatactes hemispila*, p. 66.
B. Rump and upper tail-coverts marked with white .... *N. multipunctata*, p. 67.

(46) Nucifraga caryocatactes hemispila.

THE HIMALAYAN NUTCRACKER.

Nucifraga hemispila Vigors, P. Z. S., 1830, p. 8 (Himalayas); Blanf. & Oates, i, p. 41.

Vernacular names. *Lho-kariyo-pho* (Lepcha).

Description. Narial bristles black and white; forehead, crown, nape, hind neck and upper tail-coverts chocolate-brown; with these exceptions the whole of the plumage is umber-brown, the sides of the head and neck streaked with white; chin and throat with a few small white shaft-streaks; the back, breast and upper abdomen with oval white drops; under tail-coverts pure white; wings glossy black, the lesser and median coverts with triangular white tips; a few of the inner primaries with a large oval white mark on the inner webs, probably disappearing with age, as it is absent in some birds; central tail-feathers black, the others broadly tipped white, the amount of white increasing outwardly.

Some birds have the breast-spots pale rufescent instead of white, a feature which seems to have nothing to do with age.

Colours of soft parts. Legs and feet black; iris reddish brown to hazel or deep brown; bill brown with paler tips.

Measurements. Total length about 370 mm.; tail about 150 to 160 mm.; wing 205 to 225 mm., averaging about 210 or rather more; bill 40 to 45 mm.; tarsus about 40 mm.

The young are pale brown, with rufescent drops everywhere instead of white. These, however, turn white at the first moult, when the head also acquires the white colour.

This bird is merely a local race of the European Nutcracker, from which it differs in having a far darker head, the centre of the throat and neck unspotted with white and the outer tail-feathers almost entirely white instead of merely tipped with white.

Distribution. The Himalayas from the extreme N.W., Nepal, Sikkim, Bhutan into Tibet. Its distribution still requires a considerable amount of consideration as it seems to overlap in many places with the next.

Nidification. Hume took its nest with young in May near Simla, 6,500 feet, and Mr. A. E. Jones found a nest with young and one addled egg in April in the same district, whilst Whymper took nest and eggs in Garhwal 16.5.06 at 10,500 feet. The nests are described as being like neat Crows' nests but with a thick lining of fir-needles and grass. Two clutches of eggs were obtained for me in Tibet on 30.4.20, both of which were second layings after the first had been destroyed. The two clutches contained three and four eggs, but all were unfortunately broken except one. This, and the eggs taken by Messrs. Jones and Whymper are similar in character to those of the European bird, except that they are duller pale sea-green in colour and have much larger blotches of olive-sienna and neutral tint.

My egg measures 35·0 × 26·0 mm.

Habits. This bird keeps much to forests of pine, cedar and fir between 3,000 and 12,000 feet, and subsists largely on the seeds of these trees; but they also eat other seeds and fruits as well as insects. Though not regularly gregarious, they are said sometimes to collect in small parties. Their notes are harsh and loud.

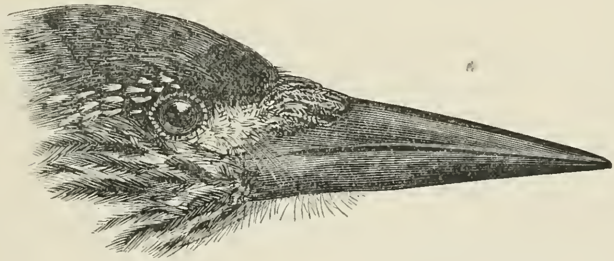


Fig. 16.—Head of *N. multipunctata.*

(47) Nucifraga multipunctata.

THE LARGER-SPOTTED NUTCRACKER.

Nucifraga multipunctata Gould, P.Z.S., 1849, p. 23 (N.W. Himalayas); Blanf. & Oates, i, p. 41.

Vernacular names. *Khak-kharra* (Pushtu); *Tong-she-sha-ga* (Tibetan).

Description. Differs from the Himalayan Nutcracker in being darker, a chocolate rather than an umber-brown, and in being much more profusely marked with white. The lores and narial bristles are white or black and white; the rump and upper tail-coverts have a white spot on each feather; the wing-coverts and quills are

more profusely spotted with white, and the white on the lower plumage is so extensive as to sometimes make this look almost wholly white.

Colours of soft parts. Iris red-brown; bill horny brown; legs and feet black.

Measurements. Length about 350 mm.; wing 190 to 210 mm., average about 200 or rather less; tail 160 to 170 mm.; tarsus about 40 mm.; bill about 50 mm. and decidedly more slender than in *hemispila* and its subspecies.

Distribution. N.W. Himalayas from Afghanistan, Gilgit, Kashmir, Ladakh to S.E. Tibet, whence I have had specimens sent me. Chambi Valley in Tibet and Sikkim.

Nidification. Eggs sent me by Mr. D. Macdonald with the parent birds from the Chambi Valley are exactly like those of the European Nutcracker, very pale blue-green speckled with dark brown sparsely everywhere and a little more numerous at the larger end. They measure about 33·6 × 24·6 mm.

The nests were said to be neat facsimiles of those of the Indian House-Crow, but neater and with a lining of pine-needles.

Habits. These differ in no way from those of the last bird. Osmaston says that it feeds principally on the seeds of the Blue Pine (*Pinus excelsa*) and of the Spruce (*Picea morinda*).

Genus **PYRRHOCORAX** Vieill., 1816.

The genus *Pyrrhocorax* contains the Choughs, of which there are two species—*P. pyrrhocorax*, the Red-billed Chough, and *P. graculus*, the Yellow-billed Chough, which occur unchanged over a great area of three continents. Both are found within Indian limits.

They resemble the true Crows in colour, but differ from them all in having the bill and feet brilliantly coloured.

The bill is long and slender and gently curved throughout its length; the narial plumes are very short and dense. The tarsus is quite smooth, differing markedly from the true Crows in this respect.

(48) Pyrrhocorax pyrrhocorax.

THE RED-BILLED CHOUGH.

Upupa pyrrhocorax Linn., Syst. Nat., ed. x, p. 118 (1758) (England).
Graculus eremita. Blanf. & Oates, i, p. 43.

Vernacular names. *Tsagh* (Kandahar).

Description. The whole plumage glossy black.

Colours of soft parts. Iris brown; legs and feet vermilion-red, claws black; bill vermilion-red.

Measurements. Total length about 450 mm.; wing 270 to 315 mm.; tail 150 to 170 mm.; culmen 45 to 60 mm.; tarsus 45 to 53 mm.

The Indian bird seems to average much larger than the English though not larger than the Continental bird.

Distribution. Northern Africa, Europe and N. Asia. In India it is found throughout the Himalayas to Eastern Tibet.

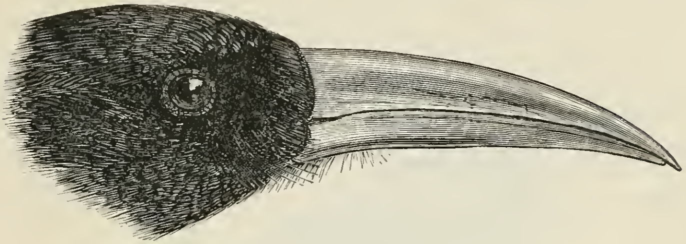


Fig. 17.—Head of *P. pyrrhocorax*.

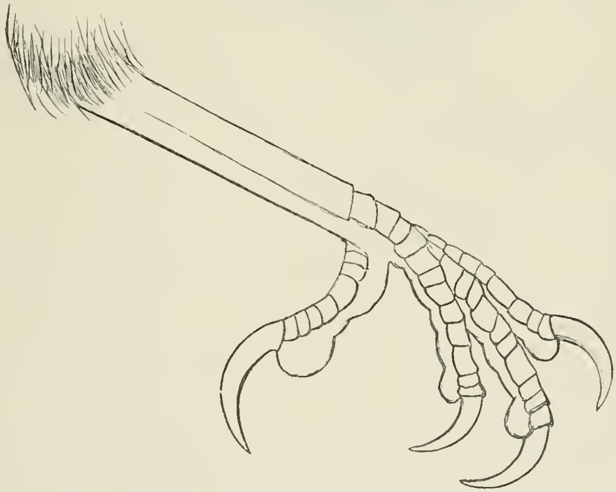


Fig. 18.—Foot of *P. pyrrhocorax*.

Nidification. The Red-billed Chough breeds freely in Tibet, Ladakh and Northern Kashmir, breeding generally in cliffs, but, in Tibet, frequently in the Tibetan houses and buildings whether occupied or not. They are early breeders, laying in the end of March and April and often having a second brood. The eggs are like those of the English bird, but much duller and more brownish in tint and they average much bigger, 41·7 × 28·4 mm. against 40·7 × 27·9 mm. Whymper took its eggs at the end of April in Garhwal at 9,000 and 12,400 feet. The nests were of sticks with wool lining, placed in clefts of rocks.

Habits. The Red-billed Chough is found in summer up to 16,000 feet and over, descending in winter to 5,000 feet or even lower. It is a gregarious sociable bird feeding together on the ground much like Rooks. They are noisy birds and haunt human habitations and camps as well as wilder tracts.

(49) Pyrrhocorax graculus.

THE YELLOW-BILLED CHOUGH.

Corvus graculus Linn., Syst. Nat., ed. xii, p. 158 (1766) (Swiss Alps).
Pyrrhocorax alpinus. Blanf. & Oates, i, p. 44.

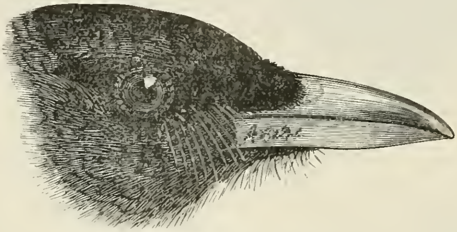


Fig. 19.—Head of *P. graculus.*

Vernacular names. None recorded.

Description. The whole plumage black with a slight gloss, more developed on wings and tail.

Colours of soft parts. Iris brown to red-brown; bill yellow; feet vermilion, the claws horny brown or black.

Measurements. Total length about 420 mm.; wing 262 to 287 mm.; tail about 180 mm.; culmen 25 to 30 mm.; tarsus 45 to 48 mm.

Distribution. South Europe and Central Asia. In India throughout the Himalayas from Kohat to Central Tibet and South-East Tibet.

Nidification. Eggs have been taken in the Liddar Valley and in S.E. Tibet in April and May from nests placed in steep rocky cliffs, either in holes or in crevices in rocks. As a rule the breeding places are almost or quite inaccessible. The eggs differ in no way from those of the European bird. The ground-colour is a very pale yellowish grey, rarely with a cream tint, and the spots are of light brown and neutral tint, rather sparse as a rule but more numerous at the larger end.

Habits. In summer it is found between 10,000 and 15,000 feet, coming down to 5,000 feet in winter. According to Stoliczka this species is very social and frequently visits the camp of the traveller in Spiti and Ladakh, as it does also in Tibet. It is as familiar and noisy in the neighbourhood of villages and camping-grounds as the common House-Crow is in India. In the breeding season it to some extent deserts human habitations for the wilder cliffs.

Genus **PODOCES** Fischer, 1823.

In this most remarkable genus are found certain species of birds which appear to be most nearly related to the Choughs but should possibly be placed in a family by themselves.

The bill is slender and very long and the nostrils completely concealed under stiff plumes; the wing is short and rounded and the legs long and strong.

These curious birds, to which the name of Ground Choughs has been given, differ from all other forms of *Corvidæ* in their very weak flight. In habits they are strictly ground-birds spending practically their whole time upon it. They are found only on the high plateaus of Central Asia, a single specimen of one species having straggled into India.

(50) **Podoces humilis.**

HUME'S GROUND CHOUGH.

Podoces humilis Hume, Ibis, 1871, p. 408 (Saryu Pass, Yarkand).

Vernacular names. *Day-day* (Tibetan).

Description. Above sandy brown with whitish collar around neck; wing-coverts like the back with faint terminal brown bars; quills brown with pale edges; below pale isabelline with centre of abdomen almost white; central tail-feathers blackish brown paling to isabelline-white on the outermost.

Colours of soft parts. Bill and feet black; iris brown.

Measurements. Wing 90 to 93 mm.; tail about 65 mm.; tarsus 28 mm.; bill about 23 mm.

The female is a trifle smaller, wing 88 to 90 mm.

Distribution. Yarkand to Tibet, Koko Nur and Kansu. A single specimen has been sent me from the Chambi Valley in the extreme north of Native Sikkim.

Nidification. This bird breeds freely in Tibet between 11,000 and 15,000 feet, making its nest, a soft pad of grass and fur, in burrows of the Mouse-hares, or self-made. According to Dresser the nest is sometimes placed at the end of a tunnel as much as 12 feet long, such as one would hardly expect the bird to excavate for itself. The eggs, either three or four in number, are pure white and measure about $22{\cdot}9 \times 16{\cdot}4$ mm. The breeding season is May, June and July.

Habits. They inhabit the same uplands as those inhabited by the Mouse-hares but are sometimes seen away from them. Their flight is very low and feeble and they are essentially ground-birds, spending their whole time thereon and never perching on trees or bushes. They are insect feeders.

Family PARIDÆ.

The Titmouses.

Oates included the Titmouses in the same family as the Crows and the group of birds he called Crow-Tits. Whilst, however, they show certain affinities with both of these groups, the three seem to be much easier to separate than are many others, such as the Thrushes, Flycatchers and Warblers, the true Shrikes, etc., and it, therefore, seems to be more consistent to keep these separate also.

The Titmouses, *Paridæ*, differ from the *Corvidæ* in having the first primary equal to or less than half the length of the second, whereas the latter have this always more than half as long as the second.

Like the *Corvidæ*, the *Paridæ* have the nostrils concealed by feathers or bristles, though in the genus *Melanochlora* the soft feathers which lie over the nostrils do not wholly cover them. The bill is short and conical, varying considerably in depth and stoutness ; the rictal bristles are short, the tarsus well developed and the surface scutulated; the wing is generally weak and rounded but is longer and more pointed in *Melanochlora*.

Hellmayr has divided the Titmouses into several subfamilies, and includes amongst them the *Paradoxornithidæ*. These latter birds, however, seem to me to constitute a good family, showing in some respects an affinity to the Titmouses, but in others a still closer connection with the *Timeliidæ*. The genus *Panurus*, the Bearded Tits, should probably also be placed with the *Paradoxornithidæ*.

As regards the Indian Titmouses, I see no reason to divide them into subfamilies, and I include them all in the same. Since, however, the 'Fauna of India' was published, we have had to add other genera and species to our list, the principal being *Remiz* (*Anthoscopus*) *coronatus* and *Parus* (*Cyanistes*) *cyanus*.

The key to the genera given below applies only to our Indian species. Hellmayr includes *Lophophanes*, *Sylviparus*, *Machlolophus* and *Cyanistes* in the genus *Parus*, but though *Cyanistes* cannot be divided from that genus, the other three appear to me to be generically distinct and are therefore retained. *Lophophanes*, it is true, is not always crested. Our Indian *Lophophanes ater æmodius* has a well-developed crest, although it is only a subspecies of *L. ater ater* which has none and the two extremes are linked up by geographical races which have crests in varying degree. On the other hand, the shape of the tail in this genus quite suffices to keep it distinct from *Parus*.

Cyanistes is a true *Parus* in everything but colour.

The young are like the adult but paler, and in some species the grey or black in the adult is strongly suffused with green in the young.

Key to Genera.

A. Tail slightly rounded.
  a. Head not crested.
    a'. Outermost tail-feathers falling short of the tip of the tail by length of hind claw only .... PARUS, p. 73.
    b'. Outermost tail-feathers falling short of the tip by length of hind toe and claw .... ÆGITHALISCUS, p. 93.
  b. Head crested.
    c'. Wing never as much as 90 mm. .... MACHLOLOPHUS, p. 89.
    d'. Wing never as short as 100 mm..... MELANOCHLORA, p. 101.
B. Tail square or very slightly forked.
  c. Head crested .... LOPHOPHANES, p. 83.
  d. Head not crested.
    e'. Plumage above yellowish green...... SYLVIPARUS, p. 88.
    f'. No green on upper plumage .... REMIZ, p. 100.

Genus **PARUS** Linn., 1766.

The genus *Parus*, of which the Great Tit of England may be considered the type, contains those Tits which are not crested and in which the tail is slightly rounded. They have a broad, black, ventral band and in this character agree with *Machlolophus*, which, however, possesses a long pointed crest.

The true Tits are found over a considerable portion of the world. Five species inhabit the Indian Empire, two being found over the greater part of Europe and Asia, i.e. *major* and *palustris*; two, *nuchalis* and *monticolus*, being local; and the fifth, *cyanus*, a very rare visitor.

In *Parus* the feathers of the crown are rather long, but do not form a crest; the tail is considerably shorter than the wing, and the outer feathers are shorter than the central ones by about the length of the hind claw.

Key to Species.

A. Plumage not blue and white.
  a. Lower plumage whitish buff, or fawn, but not bright yellow.
    a'. Back and rump ashy or greenish ...... *P. major*, p. 73.
    b'. Back and rump black .... *P. nuchalis*, p. 79.
    c'. Back and rump olive-brown .... *P. palustris*, p. 81.
  b. Lower plumage bright yellow .... *P. monticolus*, p. 80.
B. Plumage all blue and white above .... *P. cyanus*, p. 81.

Parus major.

The Great-Tits or Grey-Tits may be divided into two groups—the first group with green backs and yellow under parts, the second with grey backs and the under parts ranging from practically pure white to fawn or buff.

The first group, that of the true *Parus major*, ranges over the whole of Europe, extreme Northern Africa and Northern Asia to

Japan. Southwards it extends to Palestine, Asia Minor and Northern Persia.

The second group, which we may call the Indian *cinereus* group, is to be found through Southern Persia and North Arabia, throughout India and in a loop working North, including Afghanistan, Syr Daria and Amu Daria in Turkestan, Tianschan and Kashmir. East it is found through Burma and Southern China and the countries South of them. Between these two distinct groups we have more or less intermediate forms found in Tibet, Northern Shan States, and Central Asia.

Within Indian limits we have no form approaching the European *Parus major major* group, all our geographical races belonging to the grey *cinereus* group.

Key to Subspecies.

A. No green on back.
- *a.* Upper and lower plumage darker; tail black on inner web with grey edge, and all grey on outer web. Wing 60 to 68 mm., tail 53 to 61 mm. . . . . *P. m. cinereus*, p. 74.
- *b.* Paler; upper parts a pale clear blue-grey, under parts almost white, nuchal patch distinct and nearly white. Wing 68 to 75 mm., tail 52 to 63 mm. . . . . *P. m. intermedius*, [p. 76.
- *c.* Upper and lower parts darker, nuchal patch greyer and inconspicuous.
  - *a'.* Larger; wing 70 to 79 mm., tail 60 to 70 mm. . . . . *P. m. kaschmiriensis*, [p. 76.
  - *b.* Smaller: wing 63 to 70 mm., tail 52 to 63 mm. . . . . *P. m. planorum*, [p. 77.
- *d.* Upper plumage as dark as *cinereus*; tail black on both webs with narrow grey edges. Wing 63 to 74 mm., tail 51 to 62 mm. . . . . *P. m. mahrattarum*, [p. 77.

B. Some green on upper plumage.
- *e.* Upper parts and scapulars all olive-green; wing 66 to 79 mm., tail 66 to 74 mm. . . *P. m. tibetanus*, p. 78.
- *f.* Green confined to extreme upper back; wing 61 to 68 mm., tail 53 to 61 mm. . . *P. m. commixtus*, [p. 78.

(51) Parus major cinereus.

THE INDIAN GREY TIT.

Parus cinereus Vieill., Nouv. Dict. d'Hist. Nat., xx, p. 316 (1818) (Java).
Parus atriceps. Blanf. & Oates, i, p. 46.

Vernacular names. *Ram-gangra* (Beng.).

Description. Forehead, lores, crown, nape, chin, throat, breast, a band on either side the neck connecting the nape with the breast, and a band down the middle of the abdomen, black; cheeks

and ear-coverts white; the upper part of the back next the nape white; remainder of back, rump, scapulars, lower and median coverts ashy grey; winglet and greater coverts black, edged with ashy grey and the latter broadly tipped with white; quills dark brown, the earlier primaries and inner secondaries edged with white, the other quills with ashy grey; upper tail-coverts deep ashy blue; tail black, the four median pairs of feathers ashy grey on the outer webs and all but the middle two pairs tipped with white; fifth pair white, with the shaft black and a band of black on the inner web; outer pair nearly entirely white with black shafts; sides of the breast and abdomen vinaceous; under tail-coverts black in the centre, white at the sides.

Fig. 20.—Head of *P. m. cinereus.*

Colours of soft parts. Bill black; iris brown; legs and feet plumbeous.

Measurements. Total length about 140 mm.; wing 60 to 68 mm.; tail 53 to 61 mm.; tarsus about 15 mm.; culmen about 10 mm.

The young of this and all the allied grey forms have a tinge of yellow on the lower parts and generally a good deal of green on the upper.

Distribution. Northern India, Assam, Western Burma to Sunda Island and Java.

Nidification. Breeds throughout its range but at different times in different localities from March to June. The nest is placed in a hole of a tree, wall or, more rarely, in a bank and consists of a pad of moss, hair, wool or fur; occasionally with some vegetable cotton and feathers. Wickham reports that it took readily to nest-boxes placed low down on trunks of trees in his garden at Maymyo. The eggs, four to six in number in India, three or four only in Burma, are white or very pale pink with spots and specks of reddish brown. They average about 17·0 × 13·3 mm.

Habits. Though not gregarious in the strict sense of the term, these little birds are very sociable and may often be seen consorting in small parties in favourite feeding-haunts. They are restless, active little birds, clambering about branches and twigs in their search for insects, now hanging head downmost to reach some tempting morsel below, now standing on tip-toe to get to one above them and then once more scuttling round to catch some quickly moving ant or spider. They feed on all kinds of

insects, many seeds and fruits and in times of stress practically anything that comes to hand. A meaty bone is a tempting bait to them as is a split cocoa-nut hung in a tree near their haunts. They are essentially arboreal in their habits but occasionally descend to the ground after insects. Their note is a rather shrill whistle and their flight rather feeble and dipping. They are resident birds almost wherever found, moving about to some extent according to the seasons.

(52) Parus major intermedius.

The Afghan Grey-Tit.

Parus bocharensis var. *intermedius* Sarudny, Bull. Soc. Imp. Nat. Moscow, (No. 3), vol. iii, p. 789 (1890) (S.W. Transcaspia).

Vernacular names. None recorded.

Description. A very pale race, the upper parts a clear blue-grey, the under parts almost pure white with very little tinge of vinaceous; the nuchal patch is white and conspicuous and the grey of the tail pale and extensive.

Colours of soft parts as in *cinereus*, but the legs are pale slaty grey.

Measurements. A rather large bird with a comparatively short tail. Wing 68 to 75 mm.; tail 52 to 63 mm.

Distribution. Afghanistan, Baluchistan, Chitral, East Persia and S.W. Transcaspia.

Nidification and Habits as in *cinereus*; the eggs average about 17·5 × 13·6 mm. Its nest and eggs were taken by Whitehead at Kalhutty, Baluchistan, and by Harington in the Khagan Valley. Fulton found it up to 12,000 feet in Chitral, where it was very common, and took two nests from holes in Walnut-trees.

(53) Parus major kaschmiriensis.

The Kashmir Grey-Tit.

Parus major kaschmiriensis Hartert, Vög. Pal., i, p. 345 (1905) (Gilgit).

Vernacular names. None recorded.

Description. A dark bird distinguishable from all others of the dark forms by its greater size; both upper and lower parts are not as dark, however, as in *cinereus*, but the nuchal patch is grey and very inconspicuous.

Colours of soft parts as in *cinereus*.

Measurements. Wing 70 to 79 mm.; tail 60 to 70 mm.

Distribution. Kashmir, Garhwal, Simla, and Hills of the North-West.

Nidification. Breeds freely in Kashmir and elsewhere, from 3,500 feet up to 9,000 feet or higher. The eggs four to six, or even seven, are more richly coloured than are those of the Indian Grey-Tit and measure about 18·5 × 13·5 mm. The breeding season is from the end of April to early June.

Habits as in the other Grey-Tits.

(54) Parus major planorum.

THE PUNJAB GREY-TIT.

Parus major planorum Hartert, Nov. Zool., 1905, p. 499 (S. Punjab).

Vernacular names. None recorded.

Description. This bird is a small replica of the Kashmir Grey-Tit, much the same size as *cinereus* but decidedly paler.

Colours of soft parts as in *cinereus*.

Measurements. Wing 63 to 70 mm.; tail 52 to 63 mm.

Distribution. Plains of N.W. India and Punjab.

Nidification. Nothing recorded. Eggs of a clutch sent me, and said to have been taken at Lahore, average about 17·5 × 13·4 mm.

Habits as usual, but according to Hartert this is purely a plains form though there is very little material available for study in the shape of breeding specimens.

(55) Parus major mahrattarum.

THE SOUTHERN GREY-TIT.

Parus major mahrattarum Hartert, Nov. Zool., 1905, p. 499 (Ceylon).

Vernacular names. None recorded.

Description. Similar to the Indian Grey-Tit or even darker, the nuchal patch hardly noticeable and the tail-feathers wholly black on both webs, with only narrow grey edges to the outer webs. The black central streak on the abdomen is generally very wide.

Measurements. Wing 63 to 74 mm.; tail 51 to 62 mm.

Distribution. The whole of Central and South India and Ceylon. It is found as far north as Northern Bombay across to Chota Nagpore and E. Bengal.

Nidification. Breeds throughout its range in the more hilly parts which are well wooded. In the northern drier countries it lays in February, March, and early April; in South India in March and April and in the higher hills in April to June, whilst in Poona Betham took eggs as late as August, possibly second broods. The eggs are more richly coloured, as a rule, than those of *cinereus* and the average size of 30 eggs is 17·4 × 13·6 mm.

Habits. Similar to those of *cinereus.* This little Titmouse is really more of a hills than a plains bird, though in the winter it wanders over a very wide extent of country. It prefers hills and broken country, more especially such as are fairly well covered with trees and forest, and it is found in the hills of Southern India practically up to their summits.

(56) Parus major tibetanus.

THE TIBETAN GREAT-TIT.

Parus major tibetanus Hartert, Vög. Pal., p. 346 (1905) (Chaksam).

Vernacular names. None recorded.

Description. Back decidedly green and the lower parts suffused with yellow. Its size alone at once distinguishes it from *commixtus* and *minor*, and it has more white on the tail than either of these races.

Colours of soft parts as in *cinereus*, but tarsi apparently paler and brighter slate-blue.

Measurements. Wing 66 to 79 mm., generally over 70; tail 66 to 74 mm.

Distribution. S.E. Tibet, Yunnan and N.E. Kauri Kachin Hills. Chumba Valley, Sikkim.

Nidification. A common breeder in the Gyantse Plain, Tibet, breeding both in holes in trees and in walls and banks. Eggs of a clutch, taken from a small natural hole in a willow, measure about 18·8 × 13·5 mm., and are richly marked for Great-Tit's eggs. The nest was of wool and Mouse-hare (*Lagomys*) fur. It was taken on 18.5.17.

Habits. Those of the species.

(57) Parus major commixtus.

THE BURMESE GREAT-TIT.

Parus commixtus Swinhoe, Ibis, p. 63 (1868) (S. China).
Parus minor. Blanf. & Oates, i, p. 48.

Vernacular names. *Buinum memka* (Burmese).

Description. Differs from *tibetanus* in having the green confined to the upper back and scapulars, the yellow below is obsolete or very slight, and the white on the outer tail-feathers is less extensive. From the true *minor* of Japan and N. China it differs in being much less green above, and more buff or vinaceous rather than yellow below.

Colours of soft parts as in *cinereus.*

Measurements. Wing 61 to 68 mm., generally under 66; tail 53 to 61 mm.

Distribution. Tenasserim, Eastern Burma, Siam, Shan States and S. China.

Nidification. Breeds in April and May and possibly sometimes earlier, as a clutch in the Waterstradt collection was taken on the 20th February. The nest is made of fur, wool, or hair, sometimes with a base of soft moss and sometimes mixed moss and other materials, but nearly always lined with wool, hair, or fur. It is generally placed in some hole in a tree or dead stump but Harington took it from a hole in a bank. The eggs, four to six in number, are like those of *cinereus* and measure about 16·2 × 12·8 (16·80 × 13·05 mm. Mackenzie).

Habits. Much the same as those of *cinereus* in India. A sociable, lively little bird frequenting, preferably, broken hilly country and ascending the hills to at least 6,000 feet but also being found in the low country, perhaps, however, more frequently in the winter than in the summer.

(58) Parus nuchalis.

The White-winged Black-Tit.

Parus nuchalis Jerdon, Madr. Journ., xiii, p. 131 (1844) (Eastern Ghats); Blanf. & Oates, i, p. 49.

Vernacular names. *Nalla patsa jitta* (Tel.).

Description. The whole upper plumage, wing-coverts, lores, sides of the crown, chin, throat, centre of the breast and a broad ventral band black; a large nape-patch, the cheeks, ear-coverts and those parts of the plumage not already mentioned white; the under tail-coverts streaked with black; quills with the outer webs white at base and a partial narrow edging of white elsewhere; the later secondaries broadly edged white and the innermost one or two wholly white. The two outer tail-feathers white, the next with the outer web white, the inner web black with a white tip, the other feathers black with white tips. The amount of white on the tail varies considerably in different individuals.

Colours of soft parts. Iris dark brown; bill black; legs and feet slaty-plumbeous (*Butler*).

Measurements. Total length about 140 mm.; wing 61 to 71 mm.; tail 51 to 57 mm.; tarsus about 18 mm.; culmen about 10 mm.

Distribution. From the country round the Sambhar Lake through Ajmere to Deesa and on to Cutch; Jerdon first obtained it on the Eastern Ghats west of Nellore and Dr. Stewart obtained it at Bangalore. The specimen in the British Museum from the Gadow collection is labelled Bhutan, but this assuredly is a mistake.

Nidification. Nothing on record.

Habits. Apparently a resident bird wherever found, but very little is known about it. Jerdon records it as keeping to the tops of heavily wooded hills on the Eastern Ghats.

(59) Parus monticolus monticolus.

THE GREEN-BACKED TIT.

Parus monticolus Vigors, P. Z. S., 1831, p. 22 (Himalayas, Simla); Blanf. & Oates, i, p. 49.

Vernacular names. *Sarak-chak-pho* (Lepcha); *Daosi-whet* (Cachari).

Description. Cheeks and ear-coverts white; the whole head, nape, breast and a broad band down the middle of the abdomen black; a whitish patch on the nape; back and scapulars greenish yellow; rump slaty; upper tail-coverts black; tail black, the outer webs suffused with blue, all the feathers tipped with white, the outer web of the outermost feather entirely white; lesser wing-coverts black, edged with slaty; the other coverts and the winglet black, edged with blue and tipped with white, forming two wing-bars; the earlier primaries edged with white at base and below the emarginations; the others, with the outer secondaries, edged with blue and tipped with white; innermost secondaries black edged and tipped with white; abdomen, sides of breast and axillaries bright deep yellow; under tail-coverts black, tipped with white.

Colours of soft parts. Bill black; iris brown; legs dark slate or plumbeous, claws horny-brown to blackish.

Measurements. Total length about 130 mm.; wing 64 to 69 mm.; tail 54 to 60 mm.; tarsus about 18 to 20 mm.; culmen about 10 mm.

The female is a little smaller with a wing of 60 to 65 mm.

Distribution. The Himalayas from the extreme N.W. to Manipur, Chittagong and the N.E. of the Chin Hills.

Nidification. This little Tit breeds throughout its range at altitudes between 4,000 and 9,000 feet in April, May and June. It makes a nest of moss, fur, wool and hair, sometimes of one, sometimes of two or more of these materials, and often with a dense lining of feathers. Any convenient hole will suffice whether it be in a tree, a wall, part of a building or occasionally a bank. In Shillong it has been found in a hole in the thatch of a house but, for nesting purposes, this bird does not frequent houses and buildings as often as do the Grey-Tits.

The eggs number from four to six and even eight and are white, boldly and freely blotched with red and reddish brown. 100 eggs average 17·1 × 12·8.

Habits. A high-level bird, this little Tit is seldom found much below 5,000 feet, whilst it may be seen in the Western Himalayas up to and over 10,000 feet. It is a sociable, familiar little bird, haunting gardens and the vicinity of human habitations, keeping much to the trees and taller shrubs, on which it keeps up an ever-restless hunt for its insect food. It also eats many fruits

but is not a seed-eater, nor does it seem to enjoy a stray meat-bone from the kitchen as *cinereus* does. Its note is a very loud four syllabic whistle, which may be written *ti-ti-tee-it*, the third syllable much prolonged. In Shillong, where it is very common, this call is the first bird-note to be heard in the early dawn when it is most persistent and shrill though quite musical.

(60) Parus cyanus tianschanicus.

The Tianschan Blue-Tit.

Cyanistes cyanus var. *tianschanicus* Menzbier, Bull. Soc. Zool. France, ix, p. 276 (1884) (Mountains of Central Asia).

Vernacular names. None recorded.

Description. A thin line of deep blue running through the eye and over the ear-coverts in a narrow collar round the nape; remainder of head pale vinous blue or blue-grey; back pale blue-grey; upper tail-coverts bright dark blue, tipped with white; outermost tail-feathers white, with the basal third of the inner web black; on each succeeding pair the white decreases and the black increases and becomes more blue, especially on the outer web, until the central rectrices are all dark blue, except for broad white tips. Visible portion of closed wing deep blue, the quills edged with white on their terminal halves and the inner secondaries with bold white tips also; greater coverts with similar tips making a broad bar of white across the wing.

Below pale vinous blue-grey with a broad patch of black on the abdomen forming an interrupted black median line on these parts.

Colours of soft parts. Bill slaty horn; irides brown; legs and feet plumbeous.

Measurements. Wing about 75 mm., tail about 65 mm.; culmen about 7 mm.; tarsus about 15 mm.

Distribution. Tianschan, Turkestan, Afghanistan, Chitral.

Nidification. It is said to breed in May, laying 10 or 11 typical Blue-Tits' eggs, white spotted with red, in a nest of hair and grass in a hole. In size they seem to vary between $18{\cdot}5 \times 12{\cdot}5$ (*Dybowski*) and $14{\cdot}8 \times 11{\cdot}5$ mm. (*Rey*).

Habits. Those of the genus. They are found at considerable elevations, certainly up to 12,000 feet, descending lower in winter, especially in the most northern parts of their habitat where they may be found at the level of the Plains. Fulton obtained five young birds in Chitral, at 10,000 feet in July 1902; he reports that this Tit was common there in the river-bed, where they were frequenting dense scrub of willow, juniper and birch.

Parus palustris.

Key to Subspecies.

A. Back grey, tinged with olive-green ...... *P. p. korejewi*, p. 82.
B. Back olive-brown, much darker .... *P. p. pœcilopsis* p. 82.

(61) Parus palustris korejewi.

THE TURKESTAN MARSH-TIT.

Parus communis korejewi Zarud. & Härms, Orn. Monatsb., x, p. 54 (1902) (Karatau, Turkestan).

Vernacular names. None recorded.

Description. Head, nape and extreme upper back, chin and upper throat black; back grey, tinged with olive-rufous; next to black of head on nape pure white, fading into smoky fulvous on neck; below white tinged with fulvous on flanks and abdomen; wing-quills brown, with silver-grey edges; coverts broadly edged grey.

Measurements. Wing about 65 mm.; tail about 56·2 mm.; tarsus about 16 mm.; culmen about 10 mm.

Distribution. Turkestan, Afghanistan, Baluchistan. A rare straggler into extreme N.W. India.

Nidification. A clutch of eggs taken at Sarsen, Turkestan and given to me by Herr M. Kuschel are indistinguishable from those of the British Marsh-Tit. They average about 16·0 × 12·5 mm. and were taken on the 10th May, 1896.

Habits. Similar to those of other races of the Marsh-Tit.

(62) Parus palustris pœcilopsis.

THE YUNNAN MARSH-TIT.

Lophophanes pœcilopsis Sharpe, Bull. B. O. C., xiii, p. 11 (1902) (Chatung, W. Yunnan).

Vernacular names. None recorded.

Description. Similar to the last, but much darker olive-brown above and darker, duller fulvous below.

Colours of soft parts. Not given, but appear to be the same as in the British bird.

Measurements. Total length about 120 mm.; culmen about 10 mm.; wing about 65 mm.; tail about 52 mm.; tarsus about 14 mm.

Distribution. Yunnan. A specimen obtained by Col. H. H. Harington near Maymyo in the Kachin Hills is referable to this race.

Nidification and Habits. Nothing recorded.

Genus LOPHOPHANES Kaup, 1829.

This genus is very similar to *Parus*, but can be distinguished by the shape of its tail which is square or slightly forked. Our Indian species are crested but others are not and even in the same species the crest may be absent, moderate or well developed as in *Lophophanes ater ater* which has no crest, and in *L. a. æmodius* which has a long one.

Key to Species.

A. With a double row of spots on the wing-coverts.
 a. Abdomen iron-grey .... *L. melanolophus*, p. 83.
 b. Abdomen ferruginous .... *L. ater æmodius*, p. 84.
B. With no spots on wing-coverts.
 c. Chin and throat black or blackish.
  a'. Breast and abdomen ferruginous.... *L. rubidiventris*, p. 84.
  b'. Breast black .... *L. rufonuchalis*, p. 83.
 d. Chin and throat fulvous grey .... *L. dichrous*, p. 86.

(63) Lophophanes melanolophus.

THE CRESTED BLACK-TIT.

Parus melanolophus Vigors, P. Z. S., i, p. 23 (1831) (Himalayas).
Lophophanes melanolophus. Blanf. & Oates, i, p. 57.

Vernacular names. None recorded.

Description. Forehead, crown, crest, hind neck, lores, chin, throat and crest deep black; a large patch on the nape white; the ear-coverts extending down the sides of the neck, the cheeks and under the eye white; upper plumage iron-grey, the exposed parts of the wing and tail paler; the middle and lower series of the wing-coverts, the inner and some of the outer secondaries tipped with white, the tips of the coverts more or less tinged with rufous; lower plumage from the breast downwards iron-grey; the under wing-coverts, axillaries and a portion of the flanks chestnut; under tail-coverts nearly all chestnut.

Colours of soft parts. Bill black; legs, feet and claws dark bluish grey; iris brown (*Davison*).

Measurements. Length about 110 mm.; wing 60 to 63 mm.; tail about 37 to 38 mm.; tarsus about 16 mm.; culmen about 6 mm.

The young have the head brown; the upper plumage greyish-brown; the wing spots very rufous; the chin, throat, and crest brown; the remainder of the lower plumage fulvous-brown with the axillaries pale chestnut.

Distribution. The Himalayas from Afghanistan to Garhwal, between 6,000 and 12,000 feet.

Nidification. Breeds at all heights from the end of March to the middle of June, most eggs being laid in May. The nest may be placed in any convenient hole, in tree, wall, bank or rock. It has generally a substantial basis of moss, sometimes several inches

thick, over which is placed a mass of fur, hair or wool. The eggs number from four to ten and are white with spots of bright brownish red. Typically they are longer ovals than are the eggs of the genus *Parus* and one hundred eggs average 15·7 × 11·7 mm. They are said to generally rear two broods.

Habits. This little Tit is extremely common over the Western Himalayas, being found up to 12,000 feet in summer and down to 2,000 feet in winter, perhaps even lower. It goes about in flocks of some dozen or more birds and is very partial to oak forest when not too thick. It is said by Adams often to associate with *Cephalopyrus flammiceps.*

(64) Lophophanes ater æmodius.

THE HIMALAYAN COLE-TIT.

Parus æmodius Hodgs., Blyth, J. A. S. B., xiii, p. 943 (1844) (Nepal).
Lophophanes æmodius. Blanf. & Oates, i, p. 58.

Vernacular names. None recorded.

Description. Forehead, crown, crest, lores, sides of the head and nape, chin, throat and sides of the neck black; cheeks, ear-coverts and a nape-patch white; upper plumage and exposed parts of wings and tail bluish ashy; the rump tinged with ferruginous; the median and greater coverts tipped with white, forming two wing-bars; the inner and a few of the outer secondaries minutely tipped with white; lower plumage, axillaries and under wing-coverts ferruginous.

Colours of soft parts. Iris dark brown; legs leaden grey; bill black (*Blanford*).

Measurements. Total length about 105 mm., wing 59 to 61 mm.; tail about 40 mm.; tarsus about 17 mm.; culmen about 6 mm.

Distribution. Nepal and Sikkim. It extends into the South of Tibet as I have had a skin sent me of a bird caught on the nest in the Chambi Valley.

Nidification. A bird sent me with some eggs was caught on its nest in a hole of an oak-tree at between 10,000 and 11,000 feet elevation. The nest was all of rat fur, a well matted pad fitting into the bottom of the hollow. The eggs are indistinguishable from those of the European Cole-Tit and measure about 17·9 × 12·9 mm. The nest was taken on the 13th June.

Habits. This is a bird of high elevation from 6,000 feet upwards, ascending as high as 12,000 feet at least.

(65) Lophophanes rubidiventris.

THE RUFOUS-BELLIED CRESTED TIT.

Parus rubidiventris Blyth, J. A. S. B., xvi, p. 445 (1847) (Nepal).
Lophophanes rubidiventris. Blanf. & Oates, i, p. 58.

Vernacular names. None recorded.

Description. Cheeks, ear-covers, sides of the neck and a large nuchal spot white, remainder of head and neck dark brown or blackish, but more the deep black of *melanolophus*; upper plumage olive-brown; the wings and tail brown, with bluish-ashy edges and the upper tail-coverts tipped with fulvous; lower plumage and under wing-coverts ferruginous.

Colours of soft parts. Iris dark brown; bill black; legs and feet plumbeous-brown.

Measurements. Total length about 115 mm.; wing 60 to 63 mm.; tail about 42 to 43 mm.; tarsus about 18 mm.; culmen about 8 mm.

Distribution. Nepal and "N.W. Himalayas." The latter locality is given for some specimens in the Pinwill Collection, and may refer to Kumaon.

Nidification and Habits. Nothing recorded.

Lophophanes rufonuchalis.

Key to Subspecies.

A. Upper and lower breast black and abdomen ashy olive .... *L. rufonuchalis rufonuchalis*, p. 85.
B. Upper breast black; lower breast and abdomen ashy olive .... *L. r. beavani*, p. 86.

(66) Lophophanes rufonuchalis rufonuchalis.

THE SIMLA BLACK-TIT.

Parus rufonuchalis Blyth, J. A. S. B., xviii, p. 810 (1849) (Simla).
Lophophanes rufonuchalis. Blanf. & Oates, i, p. 58.

Vernacular names. None recorded.

Description. Ear-coverts, under the eye and a stripe down the neck white; remainder of head and neck, breast and a broad band down the abdomen black; nuchal spot white, tinged with ferruginous next the back; upper plumage olive-green; lower abdomen and sides of the body ashy-olive; under tail-coverts and axillaries chestnut; under wing-coverts pale fulvous.

Colours of soft parts. Iris dark brown; legs, feet and bill black.

Measurements. Length about 130 mm.; wing 73 to 77 mm.; tail about 55 mm.; tarsus nearly 20 mm.; culmen about 10 mm.

The young have the black replaced with brown and the chestnut with pale rufous.

Distribution. Turkestan and Afghanistan and N.W. Himalayas to Garhwal.

Nidification. Mr. L. L. Whymper is the only collector who has ever found this bird's nest. He writes:—

"I found this bird fairly common at 10,000 feet and upwards in the Bhaghirattie Valley, where Brooks got a nest with young

and I was lucky enough to find six nests. These were all in the ground, either under stones or in actual holes such as rat-holes, and all were found between the 8th and 22nd of May.

"Speaking generally it is impossible to find them except when the birds are building, for they are in the most unlikely places that show no sign whatever of a nest. Four eggs seem to form the full clutch. The nest is the ordinary pad of wool and hair with a little moss below and around.

"The male has an aggravating habit of carrying in wool after the eggs have been laid."

Three eggs given me by Mr. Whymper measure about 18·0 × 13·0 mm.

Habits. Similar to those of the Crested Hill-Tit, with which it sometimes consorts.

(67) Lophophanes rufonuchalis beavani.

THE SIKKIM BLACK-TIT.

Lophophanes beavani Blyth, Jerd. B. I., ii, p. 275 (1863) (Mt. Teringloo, Sikkim); Blanf. & Oates, i, p. 59.

Vernacular names. *Liho Tasso* (Lepcha).

Description. The colour of the back is blue-grey, instead of greenish, the light parts on the face are yellowish or yellow; below a greenish grey with no traces of a black band.

Colours of soft parts and measurements much the same as in the last.

Distribution. Nepal, Sikkim, Tibet and Western China.

Nidification. Nothing recorded. Two eggs sent by Mr. St. J. Hickley were taken at about 10,000 feet elevation from a hole in the roots of a small tree. The nest was a pad of hair and wool, and the eggs only differ from those of the last in being rather larger, measuring about 18·5 × 13·7 mm.

Habits. This is a bird of great elevations, and has so far not been recorded much below 8000 feet.

The Sikkim Black-Tit does not seem to intergrade anywhere with the Simla Black-Tit, but until more material is available from the intervening country it appears better to treat them as geographical races of the same bird.

Lophophanes dichrous.

Key to Subspecies.

A. Paler above, more rufescent below .... *L. d. dichrous*, p. 87.
B. Darker above, more buff below .... *L. d. wellsi*, p. 87.

(68) Lophophanes dichrous dichrous.

THE BROWN CRESTED TIT.

Parus dichrous Hodgs., Blyth, J. A. S. B., xiii, p. 493 (1844) (Nepal).
Lophophanes dichrous. Blanf. & Oates, i, p. 59.

Vernacular names. None recorded.

Description. Upper plumage brownish grey; the wing-feathers very narrowly edged with hoary grey; forehead and sides of the head fulvous mottled with brown; a half collar round the hind-neck, interrupted at the nape, cream-colour; chin and throat fulvous grey; lower plumage ochraceous.

Colour of soft parts. Bill dusky bluish; feet plumbeous; iris brick-red (*Jerdon*).

Measurements. Length about 115 mm.; wing about 65 to 71 mm.; tail about 55 mm.; tarsus about 18 mm.; culmen about 11 mm.

Distribution. Himalayas; South Kashmir, Garhwal, Nepal and Sikkim.

Nidification. The nest of this Tit was taken by Mr. B. B. Osmaston in the Tons Valley first with the young in 1894 and finally with eggs in 1899. The nests are described as pads of moss with a lining of fur placed in small holes in pear and other trees. They were taken at an elevation between 8,000 and 10,000 feet in April and May. The eggs are described as "white, spotted and blotched fairly thickly all over with chestnut markings." They measured ·67 × ·51 in. (=17·0 × 13·0 mm.).

The nest with eggs was placed in a natural hole in a rotten branch of a pear-tree beside the Chakrata–Simla road and in 1917 a second nest with five eggs was taken near Chakrata similar to the other but lined with hair. This too contained five eggs measuring ·69 × ·50 in. (=20·0 × 12·7 mm.).

Habits. Those of the genus.

(69) Lophophanes dichrous wellsi.

THE YUNNAN BROWN CRESTED TIT.

Lophophanes dichrous wellsi Stuart Baker, Bull. B. O. C., xxxviii, p. 8 (1917) (W. Yunnan, Yangtse big bend).

Vernacular names. None recorded.

Description. This form differs from both *L. d. dichrous* and *L. d. dichroides* in being much darker above and paler below, more buff than rufous. The head and back are practically concolorous and do not contrast, a distinctive feature in the latter race.

Dimensions and **colours of soft parts** as in *L. d. dichrous.*

Distribution. Yunnan and N. Shan States.

Nidification and Habits. Nothing recorded.

Genus SYLVIPARUS Burton, 1835.

This genus closely resembles *Parus* but differs in having a proportionately shorter, smaller bill and a square or very slightly forked tail; plumage greenish with no ventral band. There is only one species.

Sylviparus modestus.

Key to Subspecies.

A. Above olive-green, below ochraceous yellow	*S. m. modestus*,	[p. 88.
B. Above darker and duller, below dull yellowish grey	*S. m. saturatior*,	[p. 88.
C. Above paler and brighter, below brighter and paler and more yellow	*S. m. simlaensis*,	[p. 89.

(70) Sylviparus modestus modestus.

THE YELLOW-BROWED TIT.

Sylviparus modestus Burton, P. Z. S., p. 154 (1835) (Nepal); Blanf. & Oates, i, p. 53.

Vernacular names. None recorded.

Description. Upper plumage, sides of the neck, the wings and tail olive-green, the feathers of the crown centred with brown; sides of the head yellowish green slightly mottled with brown; a ring of feathers round the eye and a short eye-brow yellow; lower plumage yellow tinged with ochraceous; edge of wing and under wing-coverts bright yellow.

Colours of soft parts. Bill dark plumbeous, palest along the commissure and at base of the lower mandible; legs and feet plumbeous; iris very dark brown (*Davison*).

Measurements. Total length about 100 mm.; tail about 35 mm.; wing 60 to 64 mm.; tarsus about 15 mm.; culmen about 5 mm.

Distribution. Garhwal, Nepal, Sikkim, Bhutan and hills N. of the Brahmaputra at least as far East as the Abor Hills.

Nidification. Nothing known.

Habits. A bird of the hills above 6,000 feet. In winter it apparently comes much lower, possibly on rare occasions into the plains.

(71) Sylviparus modestus simlaensis.

THE SIMLA YELLOW-BROWED TIT.

Sylviparus modestus simlaensis Stuart Baker, Bull. B. O. C., xxxviii, p. 8 (1917) (Simla).

Vernacular names. None recorded.

Description. Differs from the true *modestus* in being a much brighter yellower green above and in being paler and purer yellow below.

Colour of soft parts and measurements as in the Nepal bird.

Distribution. Simla Hills, northwards. The division between the Garhwal and Simla birds is curious and unusual but is very marked.

(72) Sylviparus modestus saturatior.

THE CHINESE YELLOW-BROWED TIT.

Sylviparus saturatior Rippon, Bull. B. O. C., xvi, p. 87 (1900) (Mt. Victoria, Chin Hills).

Vernacular names. None recorded.

Description. Like the Nepal Yellow-browed Tit but much darker and duller both above and below. The under plumage is also more grey and less yellow.

Distribution. Hills South of the Brahmaputra, N. Burma, East into China.

Nidification unknown.

Habits. Very little recorded. A bird of high elevations like the other races.

Genus **MACHLOLOPHUS** Cabanis, 1850.

This genus contains a group of rather large Titmouses with black and yellow plumage, structurally close to the genus *Parus* but with long pointed crests. Like *Parus*, however, the birds of this genus have a broad ventral band and graduated tails.

Key to Species and Subspecies.

A. Forehead bright yellow.
- *a.* Paler and brighter, green of back more yellow and less olive .... *M. spilonotus spilonotus*, p. 89.
- *b.* Darker, green of back more olive, less yellow and with more black in proportion .... *M. s. subviridis*, p. 90.

B. Forehead black.
- *c.* Paler and brighter, tips of wing-coverts yellow................ *M. xanthogenys xanthogenys*, [p. 90.
- *d.* Darker and duller, tips of wing-coverts white .... *M. x. aplonotus*, p. 91.

(73) Machlolophus spilonotus spilonotus.

THE NORTHERN BLACK-SPOTTED YELLOW-TIT.

Parus spilonotus Blyth, Cat. B. M. A. S., xvi, p. 445 (1849) (Himalayas, N. Cachar).
Machlolophus spilonotus. Blanf. & Oates, i, p. 54.

Vernacular names. *Muchetink-pho* (Lepcha).

Description. Forehead, lores, a broad supercilium, a nape-patch, sides of the head and neck bright yellow; crown, crest, a patch on either side the nape, chin, throat and a broad mesial line down to the vent black; the longer feathers of the crest tipped with yellow; sides of the breast yellow; remainder of the lower plumage olive-yellow, purer next the black band; under tail-coverts mixed grey and white; under wing-coverts and axillaries yellowish white; back and scapulars yellow, each feather laterally margined with yellow; rump yellowish green; upper tail-coverts dark bluish grey; tail black, broadly edged with bluish grey and tipped with white, the outer web of the outermost feather entirely white; lesser wing-coverts black, tipped with bluish grey; median and greater coverts and inner secondaries black with broad white tips; primaries white at base, the outer ones edged with white, the others and the outer secondaries edged with bluish grey and the latter narrowly tipped white.

Colours of soft parts. Irides brown or red-brown; legs and feet bluish plumbeous or dark blue-slate; bill black.

Measurements. Length about 140 mm.; wing 72 to 78 mm.; tail about 58 mm.; tarsus about 22 mm.; culmen about 10 to 11 mm.

The young have no black margins to the feathers of the back and the throat, breast and ventral band are tinged with green.

Distribution. Nepal to Miri Hills north of the Brahmaputra hills south of Brahmaputra to Looshai and Lakhimpur and ? Chin Hills.

Nidification. Breeds very commonly in the Khasia Hills in April, May and June, a few birds nesting both earlier and later. The eggs are laid in holes of trees, stone walls and, very rarely, banks. The nest is a pad of moss, grass and bits of bracken mixed with fur, wool or hair and with a layer entirely composed of the three latter on the top. The eggs number from four to six and are white boldly spotted, blotched and speckled with light reddish brown with a few underlying of pale neutral tint or grey.

The average of 100 eggs is 17·6 × 14·1 mm. Like most Tits these birds are very close and fearless sitters, often allowing themselves to be caught on the nest rather than leave their eggs or young.

Habits. North of the Brahmaputra this fine Tit is confined to elevations of 5,000 feet upwards but in the Khasia Hills, Manipur, etc., it is common at 4,000 feet and descends in winter even lower. It may be found either in small parties of half-a-dozen or so, or in pairs. It is a bold familiar bird entering compounds freely and with little fear of watchers. Less restless than the Grey-Tits it is still an active, energetic bird and when hunting for insects assumes the same curious attitudes. It is a much stronger flier than the Grey-Tits and keeps more exclusively to the higher trees but I have seen it hunting low down in Mimosa trees when they are in flower.

It is an early riser and its loud "Did-he-do-it Did-he-do-it No, he didn't" may be heard soon after dawn breaks. This call is generally uttered from the top of some tree, especially the first thing in the morning.

(74) Machlolophus spilonotus subviridis.

The Burmese Black-spotted Yellow Tit.

Parus subviridis Tickell (Blyth), J. A. S. B., vol. xxiv, p. 265 (1855) (Tenasserim).

Vernacular names. None recorded.

Description. This is a darker bird than the last, the green of the back and flanks more olive and the extent of the black greater both above and on the median ventral line.

Measurements etc. as in the last bird.

Distribution. Burma, Siam, Shan States and south to Tenasserim, where it was obtained on Mt. Muleyit.

Nidification. Similar to the last. The eggs measure about 18·5 × 13·5 mm. (*Mackenzie*).

Habits. Is apparently found down as low as 3,000 feet but generally keeps more or less to the pine forest region of about 4,500 to 6,000 feet.

(75) Machlolophus xanthogenys xanthogenys.

The Northern Yellow-cheeked Tit.

Parus xanthogenys Vigors, P. Z. S., i, p. 23 (1831) (Himalayas).
Machlolophus xanthogenys. Blanf. & Oates, i, p. 55.

Vernacular names. None recorded.

Description. Lores, forehead, crown, crest, sides of the nape, a bar on the side of the neck, a broad streak behind the eye, chin, throat, centre of the breast and a broad band down the middle of the abdomen black, the longer feathers of the crest tipped with yellow; a distinct supercilium over the eye and ear-coverts, a nape-patch, the cheeks, ear-coverts, sides of the breast and of the upper abdomen bright yellow; remainder of the lower surface olive-yellow; under tail-coverts white; back and rump olive-green, upper tail-coverts slaty; scapulars and lesser wing-coverts black, broadly edged with olive-green; the other coverts black tipped yellow; primary coverts dark brown; primaries white at base, and the outer ones edged with white below the emarginations; outer secondaries edged with bluish and tipped with white, the inner secondaries with still broader white tips; tail dark brown suffused with ashy-blue on the outer webs, all the feathers tipped with white and the outer web of the outermost pair entirely white.

Colours of soft parts. Iris deep brown; bill black; legs and feet clear light slaty blue or lavender-blue.

Measurements. Length about 130 mm.; wing 69 to 73 mm.; tail about 58 mm.; tarsus about 20 mm.; culmen about 10 mm.

The young differ from the adult in having the black mostly replaced with greenish brown and the crown the same colour as the back.

Distribution. Murree to Nepal and Sikkim. The many birds recorded as *xanthogenys* from various places south of the Himalayas are all the next bird as far as can be now ascertained.

Nidification. Similar to that of *M. s. spilonotus.* The average of thirty eggs is 17·7 × 13·1 mm.

Habits. This Tit is found between 4,000 and 7,000 feet in summer and does not seem to work much lower in winter. In its habits generally it differs little from the Black-spotted Yellow-Tits. Its call, flight and feeding-habits are all described as similar.

(76) Machlolophus xanthogenys aplonotus.

THE SOUTHERN YELLOW-CHEEKED TIT.

Parus aplonotus Blyth, J.A.S.B., xvi, p. 444 (1847) (Mts. of Central India).
Machlolophus haplonotus. Blanf. & Oates, i, p. 56.

Vernacular names. None recorded.

Description. Differs from the northern bird in having the wing-coverts tipped with white instead of yellow and in having the green and yellow portions of the plumage dull instead of bright. In this bird also the line over the ear-coverts only extends to the corner of the eye and not over it.

Colours of soft parts and **measurements** as in the Northern Yellow-cheeked Tit. A careful examination of the big series in the British Museum does not show that there is any difference in size between the Northern and Southern races in spite of Oates's opinion to the contrary.

Distribution. Throughout the Peninsula of India South of a line drawn from Abu to Paresnath in Chota Nagpur, up to elevations of about 6,000 feet. This Tit does not appear to be found East of Paresnath or West of Abu.

Nidification. Similar to that of the Northern race. The average of thirty eggs is about 17·4 × 13·9 mm. They are not distinguishable from those of the last bird. It is said to breed from May to September.

Habits. Is found during the breeding season between 2,000 and 6,000 feet, wandering higher than this in the Nilgiris and coming down to the level of the plains, especially in winter. There is nothing special recorded about its habits.

Genus ÆGITHALISCUS Cabanis, 1850.

The genus *Ægithaliscus* contains a group of very small Titmonses with tails longer in proportion and more gradnated than in *Parus*. There is no crest but the feathers of the crown are very long and full. There is no ventral band.

Key to Species.

A. Chin white, throat black	*Æ. concinnus*, p. 93.
B. Chin and upper throat black in a <-shape	*Æ. bonvaloti*, p. 96.
C. Chin and throat broadly black	*Æ. leucogenys*, p. 97.
D. Chin and throat all white	*Æ. niveigularis*, p. 98.
E. Chin and throat with silver-white centre and rufescent sides..................	*Æ. ioschistos*, p. 99.

Ægithaliscus concinnus Gould, 1855.

Our little Indian Tits hitherto known as *erythrocephalus* are only a geographical race of the Chinese *concinnus*, moreover the name itself cannot be used for this Tit as it is invalidated by Linné's *Parus erythrocephalus*, x. ed. p. 191 (1758), and I have therefore had to give it a new subspecific name.

Key to Subspecies.

A. Broad supercilium white	*Æ. c. iredalei*, p. 93.
B. Supercilium mixed black and white	*Æ. c. manipurensis*, [p. 94.
C. Supercilium all black	
a. Crown ochre: pectoral band dark and well developed	*Æ. c. talifuensis*, p. 95.
b. Crown brownish buff; pectoral band paler	*Æ. c. pulchellus*, p. 95.

(77) Ægithaliscus concinnus iredalei.

THE RED-HEADED TIT.

Ægithaliscus concinnus iredalei Stuart Baker, Bull. B. O. C., xli, p. 2 (1920) (Simla).
Ægithaliscus erythrocephalus. Blanf. & Oates, i, p. 50.

Vernacular names. *Pyiong-Samyi* (Lepcha).

Description. Forehead, crown and nape chestnut; a broad eyebrow from the eye to the nape white; lores, round the eye, ear-coverts, a band under the eyebrow and a large round patch on the throat black; chin and a moustachial streak white; remainder of the lower plumage ferruginous, with a paler band across the breast next to the black of the throat; upper plumage and wing-coverts bluish grey; primary wing-coverts and winglet dark brown; quills brown, narrowly edged with bluish grey; tail dark brown suffused with bluish grey, the outer web of the outermost feather white, the inner tipped with white; the next two feathers tipped with white.

Colours of soft parts. Bill black; gape fleshy; iris pale yellow or creamy yellow; legs buffy yellow; claws livid (*Scully*).

Measurements. Length about 110 mm.; wing about 48 to 52 mm.; tarsus about 13 mm.; culmen 6 mm.

Distribution. Himalayas from Chitral to the Mishmi Hills over 5,000 feet, and in the Miri Hills, according to Stevens, over 4,000 feet.

Nidification. The breeding season of this little Tit commences about the middle of March and continues throughout April and May. The nest is a lovely little ball of moss, mixed with cobwebs, lichen and seed-down and is thickly lined with soft feathers or with feathers and seed-down mixed. About Simla it is often placed at the end of a branch of a deodar, at other times in small oaks and even in bushes and tangles of creeper. The eggs are a very pale pink with a ring of faint red freckles round the larger end, but they vary from almost pure unmarked white to a pink with a dense dark ring of reddish brown. 100 eggs average 13·88 × 10·57 mm. The clutch is from three to eight eggs. They breed at heights from 6,000 to 10,000 feet or more.

Habits. The Red-headed Tit associates in small flocks, probably merely family parties, frequenting both lofty trees and low bushes and shrubs when hunting for food, which consists almost entirely of insects. It is said, however, to also eat certain fruit and nuts. It is as restless and energetic as the rest of the family, and keeps up a constant rather shrill "tweet" as it flits or scrambles from one branch to another.

It appears to be a resident wherever found, moving up and down very little with the change of seasons.

(78) Ægithaliscus concinnus manipurensis.

Hume's Red-headed Tit.

Ægithaliscus manipurensis Hume, S. F., xi, p. 254 (1888) (Manipur); Blanf. & Oates, i, p. 51.

Vernacular names. None recorded.

Description. Differs from *iredalei* in having the eyebrow white and black, instead of pure white; the pale pectoral band next the black throat very white and distinct and the lower plumage chestnut, the portion next the pectoral band being brighter than elsewhere.

Colours of soft parts. *Male.*—Legs and feet warm reddish mahogany brown; claws darker; bill black; irides bright yellowish white.

Female.—Legs and feet very pale orange-brown; bill black; irides creamy white.

Measurements as in *iredalei*, perhaps averaging a trifle smaller; several birds have the wing under 48 mm.

Distribution. Hill ranges South of the Brahmaputra, Manipur, Looshai and the extreme northern ranges of the Chin Hills.

Nidification. Its eggs have been taken by myself in Shillong, and by Messrs. Hopwood, Mackenzie and others in the northern Chin Hills, and many by Col. Tytler in the Naga Hills where it is quite common.

Mr. Mackenzie describes the nest as like a small and beautiful specimen of the Long-tailed Tit's and remarks on its predilection for brilliant feathers for use as a lining. The eggs are like those of the Common Red-headed Tit and are nearly always three only in number. They measure about 13·0 × 10·3 mm.

The breeding season seems to be May.

Habits. Similar to those of others of the genus. In the Khasia Hills and Cachar it is found as low as 5,000 feet, but over most of its range it keeps above 6,000 feet and ascends at least as high as 9,000 feet.

(79) Ægithaliscus concinnus pulchellus.

THE SHAN RED-HEADED TIT.

Ægithaliscus pulchellus Rippon, Bull. B. O. C., xi, p. 2 (1900)(Nanoi, S. Shan States).

Vernacular names. None recorded.

Description. Can be separated at once from Hume's Red-headed Tit by the wholly black supercilium, whilst from the next bird it can be differentiated by the colour of the crown, which is brownish buff rather than ochre.

Colours of soft parts and measurements as in *manipurensis*.

Distribution. Southern Shan States, Karenni. The limits of the range of this subspecies are not yet known.

Nidification and Habits. Nothing recorded. Wardlaw Ramsay got it in Karenni at 3,000 feet.

(80) Ægithaliscus concinnus talifuensis.*

RIPPON'S RED-HEADED TIT.

Ægithaliscus talifuensis Rippon, Bull. B. O. C., xiv, p. 18 (1903) (Gyi-dzin, N. Shan States).

Vernacular names. None recorded.

Description. Similar to Hume's Red-headed Tit but has the crown ochraceous rather than chestnut; the supercilium is black, the plumage below is whiter, and the pectoral band darker, though not so dark as in the Shan bird.

---

* This form is very doubtfully distinct from *Ægithaliscus concinnus concinnus*, from China and Yunnan.

The race is nearest to true *Æ. c. concinnus* of China but is distinguished from that bird by the more chestnut flanks and sides.

Colour of soft parts as in *iredalei*.

Measurements. A rather bigger bird than the Common Red-headed Tit. Total length about 115 mm.; wing 53 mm.; tail 53 mm.; tarsus about 14 mm.

Distribution. Mt. Talifu, W. Yunnan, S.W. China and N. Shan States as far west as the Irrawaddy.

Nidification. Harington, who took this Tit's nest in the Shan States, describes it as like that of the Long-tailed Tit—a ball of moss lined with feathers and with an inner lining of seed-down, placed in a raspberry bush within two feet of the ground. The full clutch of eggs seems to be three only and they measure about 13·5 × 10·9 mm.

Harington took the above nest in the end of April but Mr. F. Grant found it breeding in March and early April.

Habits. This Tit seems to be obtained principally between 5,000 and 7,000 feet. Little has been so far recorded of its habits, which doubtless do not differ from those of others of the genus.

Ægithaliscus bonvaloti.

Key to Subspecies.

A. Below white with ferruginous pectoral band. Wing 56–61 mm. .... *Æ. b. bonvaloti*, p. 96.
B. Below rufescent with brownish band. Wing 50–55 mm. .... *Æ. b. sharpei*, p. 97.

(81) Ægithaliscus bonvaloti bonvaloti.

THE CHINESE BLACK-HEADED TIT.

Ægithaliscus bonvaloti Oustalet, Ann. Sci. Nat. Zool., (7) Vol. 12, p. 286 (1891) (Ta-tsien-lu).

Vernacular names. None recorded.

Description. Head black, a coronal streak white on the forehead and becoming chestnut-buff posteriorly; upper back dull chestnut, fading into dull olive on back and rump; feathers of the latter tipped with dull chestnut; chin and upper throat black, somewhat mottled in the centre with white edges to the feathers; below white; a broken pectoral band, flanks, vent and under tail-coverts sandy chestnut; tail blackish brown, the outermost three pairs of rectrices with terminal broad streaks of white; wings brown, quills pale-edged and coverts tipped with olive.

Colours of soft parts. Not recorded.

Measurements. Total length about 110 mm.; wing 56 to 61 mm.; tail 51 to 60 mm.

Distribution. Western China, Yunnan and N.E. Shan States. There are several specimens from the last place in the British Museum Collection.

Nidification and Habits. Nothing recorded.

(82) Ægithaliscus bonvaloti sharpei.

THE MT. VICTORIA BLACK-HEADED TIT.

Ægithaliscus sharpei Rippon, Bull. B. O. C., xiv, p. 84 (1904) (Mt. Victoria, Chin Hills).

Vernacular names. None recorded.

Description. Similar to the preceding bird, but is wholly rufescent on breast and belly. The pectoral band is brownish and the black on chin and on the throat is V-shaped.

Measurements. Wing 50 to 55 mm.; tail 48 to 51 mm.; "culmen 0·3″, tarsus 0·65″ " (*Sharpe*).

Distribution. Higher mountains of the Chin Hills.

Nidification and Habits. Nothing recorded beyond the fact that it is found in forests on the mountains of the Mt. Victoria chain at 5,000 feet and upwards.

(83) Ægithaliscus leucogenys.

THE WHITE-CHEEKED TIT.

Orites leucogenys Moore, P. Z. S., xxii, p. 139 (1855) (Afghanistan).
Ægithaliscus leucogenys. Blanf. & Oates, i, p. 51.

Vernacular names. None recorded.

Description. Forehead, crown and nape pale reddish brown; lores, a very broad band through the eye to the nape, chin and throat black; cheeks and ear-coverts white; upper plumage, a band over the ear-coverts, wing-coverts and the edges of the wing-feathers olive-grey; winglet and primary-coverts dark brown; tail brown, the outermost feather with the outer web white and the inner tipped with white, the next feather obliquely, and the one next to this again very narrowly tipped with white; lower plumage reddish fawn, the portion immediately next the black throat deep rusty red.

Colours of soft parts. Bill black; iris pale creamy or white; feet pale orange, claws dusky or brown (*Scully*).

Measurements. Total length about 130 mm.; tail about 55 mm.; wing about 55 mm.; tarsus about 17 mm.; culmen about 8 mm.

The young have the black chin and throat of the adult faintly indicated only and the colours duller.

Distribution. Garhwal, Simla Hills, into Kashmir and thence into Afghanistan.

Nidification. Whitehead (Ibis, Jan. 1909) describes the nesting of this species in the Kurram Valley, where it breeds freely in the ilex scrub between 4,000 and 8,000 feet. The nest is like that of the British Long-tailed Tit but smaller and less neat. It is made of moss and cobwebs externally, then a little green grass and finally a thick lining of feathers. The eggs seem to number from five to eight and to be very like those of the Red-headed Tit and measure 14·7 × 9·5 mm.

They breed from the end of March to early May.

Habits. In summer the White-cheeked Tit is found between 5,000 or 6,000 and 12,000 feet, but in winter descends much lower and down to some 2,000 feet. Whitehead obtained a specimen, presumably after it had bred, at Safed Koh at 1,800 feet on the 20th July.

It goes about in parties of eight or nine in scrub-jungle, continually uttering its call-note, which Whitehead syllabifies as "prit-t-t." It is sometimes found in company with Grey Tits.

(84) Ægithaliscus niveogularis.

The White-throated Tit.

Orites niveogularis Moore, P. Z. S., xxii, p. 140 (1855) (North India).
Ægithaliscus niveogularis. Blanf. & Oates, i, p. 52.

Vernacular names. None recorded.

Description. Forehead and front of crown, cheeks, chin, throat and sides of neck white; lores and a very broad eye-band black; the two bands partially blending on the nape; ear-coverts hair-brown slightly streaked with whitish; hind crown and nape buffy brown; upper plumage, wing-coverts and edges of the wing-feathers ashy grey, all but the latter tinged with isabelline; tail brown, the outermost feather with the outer web white, the next two white along the shaft and at the tip; lower plumage pinkish buff, divided from the white of the throat by a broad brown band.

Colours of soft parts. Bill dark slaty; legs reddish; irides pale yellowish.

Measurements. Total length about 110 mm.; wing about 64 mm.; tail about 56 mm.; tarsus about 18 mm.; culmen about 8 mm.

Distribution. From Garhwal and Simla to Gilgit, Chitral and Baluchistan, between 6,000 and 14,000 feet.

Nidification. The eggs of this bird were first taken by Whymper in June 1905 at Dumdar, Garhwal and more recently other nests by Messrs. B. B. Osmaston and P. Dodsworth. The

nests are described as being like that of the Red-headed Tit but larger and densely lined with feathers. That first found by Whymper was placed in the fork of a willow about 6 feet from the ground and others as much as 30 feet from it, whilst Osmaston's was in the fork of a cherry-tree, both nest and tree being covered with lichen. The eggs appear to be four in number and are like those of the Red-headed Tit's but more spotted and less zoned with the markings.

They breed from May to June at elevations of 11,000 feet upwards.

Eggs sent me by Dodsworth from above Simla measure about 14·0 × 10·5 mm. These were taken from nests in small oaks.

Habits. Osmaston found this bird common in the Tons Valley, and Whymper equally so in Garhwal at elevations of some 11,000 or 12,000 feet. It seems to haunt both thick and sparse forest equally, and to go about in little parties like the rest of its tribe. Whitehead likens its note to the "Wi" of the Goldfinch.

(85) Ægithaliscus ioschistos.

The Rufous-fronted Tit.

Parus ioschistos Hodgs., J. A. S. B., xiii, p. 943 (1844) (Nepal).
Ægithaliscus ioschistus. Blanf. & Oates, i, p. 52.

Vernacular names. None recorded.

Description. Forehead, a broad band on the middle of the head, the sides of the neck and a broad collar on the upper back fawn-colour; lores, under the eye, and a broad band on the side of the crown extending to the upper back and there blending with the band on the other side, black; ear-coverts blackish in front, rufous behind; upper plumage, wing-coverts and the edges to the wings and tail ashy olive; primary-coverts and winglet dark brown; tail brown, the outer web of the outermost feather white, the next two with some white at the tip; chin and throat silvery white, with the black bases of the feathers showing through; the chin and a stripe under the cheek blacker than the other parts; cheeks and entire lower plumage dark ferruginous.

Colours of soft parts. Bill black; legs yellow-brown; iris brown (*Jerdon*); iris yellow (*Blanford*).

Measurements. Length about 100 mm.; tail about 55 mm.; wing about 60 mm.; culmen about 7 mm.; tarsus about 17 mm.

Distribution. Nepal, Sikkim and Bhutan.

Nidification and Habits. Very little on record. Blanford found it in Sikkim at 9,000 feet and upwards, and believed that it kept only to the pine-forests.

Genus REMIZ Stejn., 1886.

This genus contains a group of small birds generally known as Penduline Tits, extending from South and East Europe to China.

They are all small in size, have square tails, no crests, and have no green on the upper plumage.

They are more or less migratory in their habits and only enter India as rather rare winter visitors.

(86) Remiz coronatus.

THE PENDULINE TIT.

Ægithalus coronatus Severtz., Izv. Obsck. Moskov, viii, p. 136 (1873) (Chodynt, Syr Daria).

Vernacular names. None recorded.

Description. Crown white, varying considerably in extent and the hinder part much marked with black: forehead, lores, sides of crown, cheeks and ear-coverts black, running round the nape as a broad band; chin, throat and neck white, forming a collar below the black band; back dark rufous, paling to dull fulvous on the lower back, rump and upper tail-coverts; tail blackish brown, most of the outer webs and edges of inner webs white; lesser and median wing-coverts like the back but duller; greater coverts blackish suffused with deep chestnut and with broad tips of pale rufous-cream; quills blackish brown edged with white. Below white, suffused with vinous or rufous on breast and flanks; under tail-coverts white.

Measurements. Length about 105 mm.; wing 52 to 55 mm.; tail about 42 to 45 mm.; culmen 5 to 6 mm.; tarsus about 12 mm.

Distribution. Transcaspia, West Turkestan, to East Persia, Baluchistan and extreme N.W. India. It has been recorded from Sukkur in Sind (*T. R. Bell*), Lachi and Kohat (*Whitehead & Magrath*) and Jhelum (*H. Whistler*).

Nidification. This little Tit makes a wonderful retort-shaped nest of vegetable wool and down lined with the softest seed-down and with an entrance near the top. It is fastened to the end of a branch of a tree.

The eggs, four or five in number, are white faintly marked with reddish specks. Four eggs in my collection measure about 14·3 × 11·0 mm. The birds are said to breed during May and June.

Habits. Apparently very similar to those of the Long-tailed Tit. In Sukkur, Bell found them in small parties in well-watered, dense tamarisk-acacia jungles but in Kohat they were noticed in flocks numbering as many as forty. Here they were seen frequenting Shisham-trees and also orchards and camel-thorn scrub. The call-note is said to resemble that of the White-eye (*Zosterops*) and to be constantly uttered as they hunt about for insects, their principal food, though they will also eat seeds and fruit, as do most other Tits.

Genus **MELANOCHLORA** Lesson, 1839.

This genus was placed by Oates amongst his *Liotrichinæ*, with which, however, it appears to have nothing in common. It is undoubtedly, a very aberrant form of Titmouse and might possibly be well placed in a Family or Sub-family by itself. The wing is long and pointed and the nostrils are slightly exposed, both features unlike any other of the *Paridæ*. On the other hand bill, feet, habits and nidification all point strongly to its affinity with these birds.

There is only one species extending from Nepal to the Malay Peninsula.

Melanochlora sultanea.

Key to Subspecies.

A. Yellow very brilliant and strong; rather larger .... *M. s. sultanea*, p. 101.
B. Yellow paler and less bright; rather smaller .... *M. s. flavocristata*, p. 102.

(87) Melanochlora sultanea sultanea.

The Indian Sultan Tit.

Parus sultaneus Hodgs., Ind. Rev., 1836, p. 31 (Nepal).
Melanochlora sultanea. Blanf. & Oates, i, p. 241.

Vernacular names. *Bon-tylia-pho* (Lepcha); *Dao-rajah-gatang-lili* (Cachari).

Description. *Adult male.*—Forehead, crown and crest brilliant yellow; the rest of the head, whole upper plumage, wings and breast deep black, with a metallic lustre on wings and back; tail the same with outermost feathers tipped with white; remainder of lower plumage deep bright yellow, the thighs mixed with some white.

Colours of soft parts. Bill black; mouth dark fleshy; eyelids plumbeous; irides dark brown or red-brown; legs dark slaty, claws dark horny.

Measurements. Total length about 200 mm.; wing 110·5 to 115 mm.; tail about 85 to 95 mm.; tarsus about 24 mm.; culmen about 17 mm.

Adult female and young. The black of the male is replaced with greenish brown, the yellow is paler and duller, and the chin and throat are yellowish brown.

Distribution. The Lower Himalayas from Nepal, through Assam, North and South of the Brahmaputra to the Kachin and Shan Hills and to Arrakan. Birds from Karenni and North Siam are of this race.

Nidification. A nest taken by me in N. Cachar on the 17th May, 1890, was similar to that of a Titmouse, a pad of moss with dense lining of cotton-down, placed in a crevice in a big bough of an oak. The eggs, seven in number, are like those of a *Machlolophus* and measure about 19·2×15·3 mm. They were on the point of hatching.

Habits. The Sultan Tit goes about in small flocks of half-a-dozen or so very much like the birds of the genus *Machlolophus* and have the same manner of searching for insects in the branches of trees, but their actions are somewhat slower and more deliberate. They eat both insects and fruit and seeds, principally the first-named, and their call is a loud, rather shrill note bearing a resemblance to the note of the Great Tit.

They are low-level birds, being found principally at and below 2,000 feet, though they ascend sometimes as high as 4,000 feet. They may be found both in evergreen and deciduous forest, preferring the former, and they also frequent bamboo-jungle and scrub and secondary growth. They are not shy birds.

(88) Melanochlora sultanea flavocristata.

The Malay Sultan Tit.

Parus flavocristatus Lafres., Mag. de Zool., Cl. 2, p. 80 (1837) (Iles de la Sonde).

Vernacular names. None recorded.

Description. Similar to the last but with the yellow paler and less rich.

Measurements. Rather smaller than true *sultanea* with a wing under 110 mm.

Distribution. Peninsular Siam and Burma to Sumatra.

Nidification unknown.

Family PARADOXORNITHIDÆ.

When Blanford and Oates wrote the 'Avifauna of British India' very little had been recorded about the habits and nidification of this group of birds and it was, perhaps, on account of this that they were placed by them as a Sub-family of the *Corvidæ*. When Harington in 1914 wrote his "*Timeliides*" in the Journal of the Bombay Natural History Society, he incorporated the *Paradoxornithidæ* in this so-called Order. I can, however, see no reason for raising the *Timaliidæ* to the rank of an Order, and though it appears that in many respects these curious birds do form a link between the Titmouses and Babblers, it appears preferable to give them the rank of a family between the two.

The genus *Panurus* is undoubtedly a close relation of some of our Indian Parrot-Bills, and will have to be incorporated in the same family.

The *Paradoxornithidæ* differ from the *Paridæ* in having a much longer first primary, the plumage very soft and lax, and in having a thick, soft crest of feathers arising from the whole crown. From the *Timaliidæ* they differ in having the nostrils completely covered with bristles.

They are very gregarious in their habits and build cup-shaped nests in reeds, bushes, etc., whilst their eggs are of several types. The bill is very deep, being greater in depth than length in all but *Conostoma*. The culmen is very rounded transversely and the margins of the mandible in most species are curiously sinuate.

Key to Genera.

A. Tail longer than the wing.	
a. Tail less graduated; outermost pair of feathers fully $\frac{3}{4}$ length of tail..........	CONOSTOMA, p. 103.
b. Tail more graduated; outermost pair of feathers not more than $\frac{2}{3}$ length of tail.	
a'. Height of bill more than length. Commissure greatly curved	PARADOXORNIS, p. 105.
b'. Height of bill less than length. Commissure very slightly curved	SUTHORA, p. 107.
B. Tail no longer, or shorter, than wing.	
c. Wing well over 3 inches or 76 mm.	PSITTIPARUS, p. 116.
d. Wing well under 3 inches or 76 mm.	NEOSUTHORA, p. 115.

Genus CONOSTOMA Hodgson, 1841.

The genus *Conostoma* contains only one species, the largest member of the family. It is characterized by a tail longer than the wing, but with the feathers considerably less graduated than in the following genera. The bill is proportionately much longer.

(89) Conostoma æmodium.

THE GREAT PARROT-BILL.

Conostoma æmodius Hodgs., J. A. S. B., x, p. 857 (1841) (Nepal).
Conostoma æmodium. Blanf. & Oates, i, p. 61.

Vernacular names. *The Red-billed Jay-Thrush* (Jerdon); *The Red-billed Crow-Tit* (Oates); *Lho-rannio-pho* (Lepcha).

Description. Lores and feathers in front of the eye dark brown; forehead greyish white; upper plumage olive-brown with a rufous tinge; outer edges of primaries ashy; of the secondaries rufous, their tips and the whole of the innermost secondaries ashy; tail ashy grey, more or less washed with rufous along the middle of the feathers; chin, throat, and sides of the head brown, with a vinous tinge, becoming paler on the rest of the lower plumage.

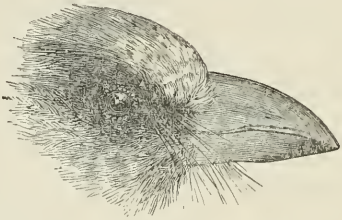


Fig. 21.—Head of *C. æmodium.*

Colours of soft parts. Bill horny or dull orange; legs pale to plumbeous or slate-grey; iris brown.

Measurements. Length about 300 mm.; wing about 130 to 133 mm.; tail about 140 mm.; tarsus about 37 mm.; culmen about 20 mm. and from gape 25 mm.

Distribution. From Nepal, through Sikkim and the higher ranges of hills of North Assam into Tibet and W. China.

Nidification. Breeds in Sikkim in May. Hume describes the nests as shallow, almost hemispheral cups very compactly made of grass and lined with the finest grass-stems. A nest sent to me was similar but deeper in shape, measuring about 130 mm. in breadth and about 105 mm. in external depth. All the nests were placed in clumps of *ringal* bamboo at elevations of over 10,000 feet, except one sent me which had been built in high reeds.

The egg is a dull white sparsely spotted, speckled and smudged with yellowish brown and inky purple. The only two eggs known both measure about 27·8 × 20·4 mm.

Habits. The Great Parrot-Bill is a bird of very high elevations breeding between 10,000 and 12,000 and descending in winter

some 4,000 feet lower. It is found in small companies, scrambling and climbing about bamboos, reeds and high grass, hunting for insects, on which it chiefly feeds. Its flight is weak and fluttering and its call is a loud bleat.

Genus **PARADOXORNIS** Gould, 1836.

The genus *Paradoxornis*, as restricted by Oates, contains only three species, two of which are found in India and Burma and a third *heudei* in Eastern China. *Paradoxornis* differs from *Conostoma* in having the feathers of the tail more graduated and the bill shorter and much deeper. The cutting-edge of the upper mandible has a deep sigmoid curve with a corresponding sinuation in the lower. The plumage is very lax and full, the wing short and rounded, the 4th, 5th, and 6th quills being subequal.

Key to Species.

A. Throat barred black and white, bordered below with a black band .... *P. flavirostris*, p. 105.
B. Throat pale fulvous with black arrow-head markings and no band .... *P. guttaticollis*, p. 106.

Fig. 22.—Head of *P. flavirostris*.

(90) Paradoxornis flavirostris.

GOULD'S PARROT-BILL.

Paradoxornis flavirostris Gould, P. Z. S., iv, p. 17 (1836) (Nepal); Blanf. & Oates, i, p. 62.

Vernacular names. *Dao mougasha gadeba* (Cachari); *But-but Sorai* (Plains Miri).

Description. Forehead, nape, sides of neck and hinder parts of ear-coverts dull chestnut; lores black; feathers round the eye and a patch under it white, the bases of the feathers more or less black; anterior two-thirds of ear-coverts and the point of the chin black; cheeks and chin white barred with black; throat black; upper plumage fulvous-brown, rufous on the tail and visible portion of wings; lower plumage fulvous.

Colours of soft parts. Iris deep red or red-brown; bill wax-yellow to bright yellow; legs clear slate or plumbeous grey.

Measurements. Length about 180 mm.; wing about 85 to 90 mm.; tail about 100 to 110 mm.; tarsus about 30 mm.; culmen about 12 mm.

Distribution. From Nepal to the Chin Hills and the hills south of the Brahmaputra from the foothills up to 5,000 or even 7,000 feet.

Nidification. This Parrot-Bill breeds in April and May and the early part of June, making a very compact, deep nest of soft grasses, a few shreds of bamboo-leaves and the bark of reeds, well coated over with cobwebs and lined with fine grass-stems. It is placed either in reeds, bamboo clumps or in bushes, low down and generally well concealed but sometimes quite exposed. The eggs are normally only two in number, sometimes three. They are pure white in ground-colour, very sparsely speckled and spotted with tiny pinky-brown marks. Occasionally eggs are found which are more like those of *Psittiparus*, but such are very rare. Thirty-five eggs average $21 \cdot 9 \times 16 \cdot 2$ mm.

Habits. Gould's Parrot-Bill is found from the level of the plains of North Assam up to 7,500 feet in the Naga Hills, at which elevation Col. Tytler repeatedly took its nest. It is a shy, retiring bird, the flocks in the cold weather skulking about in grass and reeds, climbing with considerable agility but very loath to fly and then usually only fluttering away into thicker cover a few yards distant. When unaware that they are being watched they are in the habit of fluttering a few feet into the air above the reeds or bushes uttering a loud chirrup as they rise. They have the same bleating or mewing cry which seems to be common to the family. Although principally insect-feeders they also eat seeds and berries. Stevens refers to the curious snapping sounds made by these birds with their bills when feeding.

(91) Paradoxornis guttaticollis.

AUSTEN'S PARROT-BILL.

Paradoxornis guttaticollis David, Nouv. Arch. Mus., vii, p. 14 (1871) (Szechuen, W. China); Blanf. & Oates, i, p. 62.

Vernacular names. *Dao mougasha gadeba* (Cachari).

Description. Differs from *flavirostris* in having the cheeks, chin, throat and upper part of the breast pale fulvous white, with numerous delicate arrowhead-shaped marks of black, and the remainder of the lower plumage of the same colour but without the marks; the head and crest of a paler chestnut; the bill about half the size and the legs much feebler.

Colours of soft parts. Iris brown to red-brown; bill wax-yellow; legs and feet slaty-grey or plumbeous tinted with blue or green; "legs and claws green" (*Cockburn*).

Measurements. Rather smaller than the last; tail about 100 mm.; wing 80 to 85 mm.; culmen about 8 to 9 mm.; tarsus about 26 mm.

Distribution. Hills south of Brahmaputra, N. Lakhimpur, hills of N. Burma, Shan States into western China.

Nidification. Similar to that of the last bird but probably never breeds below 3,000 feet and seldom under 4,000 feet. The eggs also are indistinguishable and the average of 34 is 22·2 × 16·4 mm.

Habits. The same as those of *flavirostris*, but whereas that bird is most common at low levels this is found at much higher levels and never, so far as has been recorded, in the plains or foot-hills.

Genus **SUTHORA** Hodgson, 1838.

The genus *Suthora* is one which has been much split up by some Ornithologists. Harington accepted *Heteromorpha*, *Chleuasicus*, *Suthora* and *Neosuthora* as good genera. Whilst, however, the last named is sharply divided from the others by its very short tail, I can find no generic differences between the three first and retain them all under *Suthora*.

The characteristics of the genus are the short, thick bill, a trifle longer than deep, the culmen strongly curved but with the commissure almost straight. The nostrils are very small, circular, and completely concealed by plumules. The sixth primary is a little longer than the fifth and seventh or subequal. The tail-feathers are long and narrow and greatly graduated, the outer being about half the length of the central. The plumage is soft and full and there is a short thick crest.

Key to Species and Subspecies.

A. A well-defined supercilium of black or brown.
- *a*. Whole upper plumage olive-brown. — *S. unicolor*, p. 108.
- *b*. Crown ashy-brown, remaining upper plumage orange-brown .... *S. nepalensis*, p. 109.
- *c*. Crown and upper parts all orange-brown.
  - *a′*. Ear-coverts slaty blue-grey.
    - *a″*. Breast and abdomen pale grey — *S. poliotis poliotis*, p. 109.
    - *b″*. Breast and abdomen orange-fulvous .... *S. p. ripponi*, p. 111.
  - *b′*. Ear-coverts orange-chestnut .. *S. p. humii*, p. 110.

B. Supercilium obsolete or entirely absent.
- *d*. Crown and upper plumage orange-brown.
  - *c'*. Ear-coverts slaty grey, breast fulvous .... *S. p. feæ*, p. 111.
  - *d'*. Ear-coverts brown, breast orange-fulvous .... *S. gularis craddocki*, p. 111.
- *e*. Crown chestnut-brown, back olive-brown .... *S. webbiana brunnea*, p. 112.
- *f*. Centre of crown fulvous, back olive-yellow .... *S. fulvifrons*, p. 113.
- *g*. Crown bright chestnut, back rufous-brown.
  - *e'*. No supercilium at all .... *S. ruficeps ruficeps*, p. 114.
  - *f'*. A short black supercilium directly over eye .... *S. r. atrisuperciliaris*, p. 114.

(92) Suthora unicolor.

THE BROWN SUTHORA.

Heteromorpha unicolor Hodgs., Ind. Rev., ii, p. 32 (1838) (Nepal).
Suthora unicolor. Blanf. & Oates, i, p. 64.

Vernacular names. *Lho-ramnio-pho* (Lepcha).

Description. Forehead and crest brown tinged with rufous: lores and supercilia reaching to the nape black; chin and sides of

Fig. 23.—Head of *S. unicolor*.

the head vinous brown; throat and sides of the neck greyish brown; upper plumage olive-brown, strongly tinged with rufous on the tail and visible portions of wings; breast and lower plumage dull fulvous.

Colours of soft parts. Iris hoary grey to brown (? juv.); bill fleshy yellow to orange-yellow; legs and feet pale slaty tinged with grey or green.

Measurements. Total length about 200 mm.; wing 80 to 85 mm.; tail about 102 to 107 mm.; culmen 10 mm.; tarsus about 30 mm.

Distribution. The higher regions of Nepal and Sikkim; Jerdon obtained it at 10,000 feet near Darjeeling and Blanford in the Lachung Valley between 7,000 and 8,000 feet elevation. It extends to the mountains which lie between China and Tibet.

Nidification and Habits. Nothing recorded.

(93) Suthora nepalensis.

THE ASHY-EARED SUTHORA.

Suthora nepalensis Hodgs., Ind. Rev., ii, p. 32 (1838) (Nepal); Blanf. & Oates, i, p. 65.

Vernacular names. *Suthora* (Nepal).

Description. Forehead, crown and nape smoky grey; a very broad black supercilium from forehead to nape; lores, round the eye, and a short broad eyebrow white; remainder of the side of the head slaty blue; upper plumage and wing-coverts orange-brown; primary-coverts black; primaries with hoary outer webs, tinged with chestnut at base; the outer quills chiefly chestnut on the outer webs and tipped with white on both webs; tail chestnut broadly tipped with blackish; point of the chin black; throat rusty, with black bars showing through; lower plumage orange-fulvous.

Colours of soft parts. Not recorded.

Measurements. Total length about 110 mm.; wing 47 to 49 mm.; tail about 55 to 58 mm.; tarsus about 16 to 16·5 mm.; culmen about 5 mm.

Distribution. Nepal only.

Nidification and Habits. Nothing known.

(94) Suthora poliotis poliotis.

BLYTH'S SUTHORA.

Suthora poliotis Blyth, J. A. S. B., xx, p. 522 (1851) (Cherrapanji, Khasia Hills); Blanf. & Oates, i, p. 65.

Vernacular names. *Dao mougasha kashiba* (Cachari).

Description. Upper plumage bright orange-brown; a broad black supercilium extending to the nape and a narrow white line below it; lores, cheeks and under the eye white; ear-coverts and sides of the neck slaty-blue; a streak of fulvous behind the eye and over the front part of the ear-coverts; chin and throat black; lower plumage bluish grey, becoming whitish on the abdomen and under tail-coverts; primary-coverts black; primaries with hoary outer webs, tinged with chestnut at the base; the outer quills chiefly chestnut on the outer webs and tipped with white; tail chestnut broadly tipped with blackish.

Colours of soft parts. Iris brown; legs slate-grey or bluish slaty; bill fleshy yellow.

Measurements. Length about 100 mm.; wing 44 to 46 mm.; tail about 52 mm.; culmen about 5 mm.

Distribution. Hills south of the Brahmaputra from the Khasia Hills to the Eastern Naga Hills.

Nidification. This little bird breeds in the Khasia and N. Cachar Hills in May and June, making a very neat little, cup-shaped nest of fine grasses and shreds of bamboo-leaves well fastened together with cobwebs and lined with the finest grass-stems. It is placed low down in thick bushes or tangles of creepers, both in scrub jungle and evergreen forest. The eggs are generally three in number and are of a rather deep hedge-sparrow's egg-blue, unspotted. In shape they are rather broad ovals with the smaller end broad and blunt. Twenty eggs average 15·7 × 11·9 mm.

Habits. Blyth's Suthora seems to be found at elevations between 2,000 and 4,000 feet, wandering about in small flocks in the denser undergrowth in evergreen forest or, less often, in scrub and secondary growth. They are great skulkers and very hard to get a shot at as they climb and scramble through the lower parts of the bushes, only showing themselves for a second or two as they feebly flit from one bush to another. Their call-note is a very plaintive little bleat, constantly uttered by each member of the flock, and they also have a variety of low cheeps and "chirrs." They feed both on insects and grass-seeds, etc.

Hellmayr ('Genera Avium,' p. 73) considers *daflaensis* separable from true *poliotis* in that it has the feathers of the chin and throat with longer white fringes than has the latter bird. I cannot separate the two races with the material available.

(95) Suthora poliotis humii.

THE BLACK-FRONTED SUTHORA.

Suthora humii Sharpe, Cat. B. M., vii, p. 487 (1883) (Darjeeling); Blanf. & Oates, i, p. 64.

Vernacular names. None recorded.

Description. Similar to *S. p. poliotis*, but has the ear-coverts orange-chestnut and the flanks and vent orange-fulvous.

Colours of soft parts as in *poliotis*.

Measurements. Wing from 46 to 48 mm.

Distribution. Native Sikkim extending to the hills about Darjeeling.

Nidification unknown.

Habits similar to those of *poliotis*.

(96) Suthora poliotis feæ.

SALVADORI'S SUTHORA.

Suthora feæ Salvadori, Ann. Mus. Civic. Genova, vii, p. 364 (1889) (Karenni); Blanf. & Oates, i, p. 66 (footnote).

Vernacular names. None recorded.

Description. Similar to *S. p. poliotis*, but with flanks and vent bright pale fulvous and no black supercilium.

Colours of soft parts and **Measurements** as in Blyth's Suthora.

Distribution. So far only obtained in Karenni and Fort Stedman.

Nidification. A nest sent to me from near Fort Stedman, with both parents, was made entirely of shreds of fine grass, coated with cobwebs and lined with fine grass-stems. It was cup-shaped and had been placed low down in matted reeds and grass. The two blue eggs measure 15·3 × 12·5 and 16·0 × 12·5 mm.

Habits. Nothing recorded, and the only known specimens are Salvadori's type and those sent me from Fort Stedman by Col. H. H. Harington.

(97) Suthora poliotis ripponi.

RIPPON'S SUTHORA.

Suthora ripponi Sharpe, Bull. B.O.C., xv, p. 96 (1905) (Mt. Victoria, Chin Hills).

Vernacular names. None recorded.

Description. Similar to *S. p. poliotis*, but has the breast and abdomen orange-grey and the ear-coverts a distinctly paler grey.

Colours of soft parts as in *poliotis*.

Measurements. Total length about 110 mm.; wing about 48 mm.; tail about 56 mm.; tarsus about 18 mm.

Distribution. Mt. Victoria, Chin Hills.

Nidification and **Habits.** Nothing recorded.

(98) Suthora gularis craddocki.

BINGHAM'S SUTHORA.

Suthora craddocki Bingham, Bull. B.O.C., xiii, p. 54 (1903) (Loi-Pang-Nan, Shan States).

Vernacular names. None recorded.

Description. "Forehead, crown, nape, back, rump, and upper tail-coverts orange-brown, shaded on the back and nape with

olive-brown; the primaries edged externally with white, the secondaries and tertiaries broadly edged with bright orange-brown; the primary-coverts brown, forming a conspicuous patch on the upper portion of the wing; tail brown, the outer edges of the feathers bright rufous-brown for three-fourths of their length from the base; lores, cheeks and a long supercilium white; the white of the cheeks extending on to the sides of the neck; ear-coverts brown; chin and throat black, shading into grey on the upper breast; abdomen and under tail-coverts bright orange-brown.

"Upper mandible horny, lower fleshy-yellow; legs and feet fleshy-brown. Length about 4″ (100 mm.), wing 1·8″ (45 mm.), tail 1·9″ (48 mm.), bill 0·3″ (7 mm.), tarsus 0·9″ (22·8 mm.)." (*Bingham.*)

Bingham's Suthora is only a race of *gularis* (*verreauxi* Sharpe, Cat. B.M.), differing from that bird in having the abdomen and under tail-coverts orange-brown instead of white.

Distribution. Mekong water-shed, Kentung State, Shan Hills.

Nidification unknown.

Habits. This little Suthora is evidently a bird of very high elevations, only having been found by Bingham at 8,500 feet.

(99) Suthora webbiana brunnea.

ANDERSON'S SUTHORA.

Suthora brunnea Anderson, P.Z.S., 1871, p. 211 (Yunnan); Blanf. & Oates, i, p. 68, footnote.

Vernacular names. None recorded.

Description. The whole head and neck all round with the breast chestnut-brown, suffused with vinaceous below: the upper plumage, wing-coverts, tail and exposed parts of closed wing olive-brown; lower plumage yellowish brown.

Colours of soft parts. Iris deep red; bill yellow horny, pale except on the culmen; legs greenish plumbeous or slaty brown.

Measurements. Total length about 125 to 130 mm.; wing 51 to 54 mm.; tail about 60 to 65 mm.; tarsus about 20 mm.; culmen about 7 mm.

Distribution. Yunnan and the Kachin Hills from Bhamo eastwards.

Nidification. This bird has been found breeding commonly in Sinlum-Kaba, Bhamo District, at an elevation of some 6,000 feet. Harington describes the nest as "a rather deep cup-shaped structure composed of bamboo-leaves and coarse blades of grass,

lined with finer grass and a few horse-hairs; measuring about 4″ × 3½″ outside and 2″ × 2″ inside.” The nests were all extremely well concealed and were only discovered by carefully watching the birds. They were placed in clumps of reeds or grass, or in thick bushes and tangles of creepers, in each case quite low down, less than three feet from the ground.

The eggs number 2 to 4, the former number having been taken much incubated, but 3 is the usual full clutch. In colour they are a rather deep, unspotted hedge-sparrows' egg-blue and in shape broad ovals, very little compressed at the smaller end. Twenty-four eggs average 16·3 × 12·8 mm.

The breeding season is from the end of April to early June.

Habits. Anderson's Suthora keeps principally to reed and grass cover, where they creep about but seldom fly. As they hunt for insects they keep up a continuous twittering, and they are more often heard than seen.

(100) Suthora fulvifrons fulvifrons.

THE FULVOUS-FRONTED SUTHORA.

Temnoris fulvifrons Hodgs., P. Z. S., xiii, p. 31 (1845) (Nepal).
Suthora fulvifrons. Blanf. & Oates, i, p. 66.

Vernacular names. None recorded.

Description. Forehead, middle portion of the crown, a very short supercilium, cheeks, chin, throat, breast, sides of the neck and the under tail-coverts bright fulvous; a broad band from the lores over the eye to the nape, the back, rump and lesser wing-coverts olive-yellow; upper tail-coverts fulvous; greater wing-coverts edged with chestnut; quills with the outer webs chestnut, hoary on the basal halves of the primaries; tail blackish, the outer webs more or less bright chestnut except at the tips; abdomen deep grey.

Colours of soft parts. Irides brown; bill pale fleshy yellow, horny above; legs fleshy brown.

Measurements. Total length about 150 mm.; wing about 54 to 56 mm.; tail about 66 mm.; culmen about 5 mm.; tarsus about 20 to 22 mm.

Distribution. Nepal and Sikkim.

Nidification and Habits. Practically nothing known. Masson found it breeding on the Singlo Ridge about 8,500 feet, but failed to find the nest. This was in May. It probably keeps to high elevations and dense forest in which it is not easily observed.

(101) Suthora ruficeps ruficeps.

THE RED-HEADED SUTHORA.

Chleuasicus ruficeps Blyth, J. A. S. B., xiv, p. 578 (1845) (Sikkim).
Suthora ruficeps. Blanf. & Oates, i, p. 67.

Vernacular names. *Chongto-phep-pho* (Lepcha).

Description. Forehead and crest to hind neck bright chestnut; sides of the head and neck paler; lower plumage white, tinged with pink on the breast; upper plumage rufous-brown, deeper on the tail and exposed parts of the wings; shafts of chin-feathers distinctly black.

Colours of soft parts. Bill creamy or fleshy white or pale horny; legs greenish plumbeous; iris bright red-brown.

Measurements. Total length about 150 mm.; wing 75 to 78 mm.; tail about 80 mm.; tarsus about 23·5 mm.; culmen about 7·5 mm.

Distribution. Sikkim only.

Nidification unknown.

Habits. A very rare bird found in Sikkim at 7,000 feet upwards. The habits are probably much the same as those of the next bird.

(102) Suthora ruficeps atrosuperciliaris.

THE BLACK-BROWED SUTHORA.

Chleuasicus ruficeps var. *atrosuperciliaris* Godw.-Aust., P. A. S. Beng., 1877, p. 147 (Sadiya, Assam).
Suthora atrisuperciliaris. Blanf. & Oates, i, p. 67.

Vernacular names. *Dao-mougasha* (Cachari).

Description. Differs from the last bird in being darker and more richly coloured everywhere and in having a well-defined black eyebrow.

Colours of soft parts. Maxilla fleshy, the culmen and base a little darker and becoming bluish next the forehead, lower mandible pale fleshy, the gonys almost white; irides light bright brown; legs pale, clear bluish plumbeous, claws paler still.

Measurements. Total length 145 to 150 mm.; wing 57 to 59 mm.; tail about 99 mm.; culmen about 10 mm. and from gape about 12 mm.

Distribution. From Cachar to Lakhimpur in Assam, south of the Brahmaputra and east of the Dibong in the Abor and Miri Hills, north of the same river and thence eastwards to Yunnan through the Shan States. Godwin-Austen's birds from Baladhan were undoubtedly of this and not the last race.

Nidification. The only nest I have seen of this bird was an exact miniature of those of *Paradoxornis* and *Psittiparus*. Outwardly it measured 2·5″ × 3″ deep and inwardly 2″ × 2″. It was composed of fine shreds of grass and reed-bark with a lining of

SUTHORA R. ATROSUPERCILIARIS.
The Black-browed Suthora.
$^2/_3$ life size.

the finest grasses but, under these, were a few scraps of bamboo leaves. It was bound together with cobwebs and placed in a bamboo clump growing on a grass-covered hillside.

The single egg contained in the nest was a pale hedge-sparrow blue and measured 19·5 × 15·2 mm. A nest with three eggs taken by a Naga were similar but the latter measured only about 18·4 × 13·6 mm.

Habits. An inveterate little skulker in long grass and scrub-jungle, never taking to flight unless actually forced, but creeping in and out low down and out of sight, though its constant twittering may be heard the whole time. They go about in large parties numbering a dozen or more and, when they think they are not being watched, every now and then one climbs to a tall grass, chirps loudly and immediately descends again. They consort frequently with both *Psittiparus ruficeps* and *Paradoxornis* and it is very curious to watch these three Red-heads in company. The Black-browed Suthora is found in winter practically in the plains and in summer breeds between 2,000 and 4,500 feet. I found in the stomachs of those examined by me small grass-hoppers, Coleoptera, and a few hard seeds.

Genus **NEOSUTHORA** Hellmayr, 1911.

This genus differs from *Suthora* in having the tail less graduated and much shorter, not more than three-fourths the length of the wing; the bill is larger and much deeper in proportion; the wing is still more rounded, the 4th to the 7th being subequal. It contains but one species, *Neosuthora davidiana*, of which a subspecies, *N. d. thompsoni*, comes within our limits.

(103) Neosuthora davidiana thompsoni.

THOMPSON'S SUTHORA.

Suthora thompsoni Bingham, Bull. B. O. C., xiii, p. 63 (1903) (Kyatpyin, Shan States).

Vernacular names. None recorded.

Description. Top and sides of the head bright cinnamon-rufous; hind neck, back and rump pale slate-grey, more or less washed with olive; wings and tail grey-brown, the quills edged with bright rufescent brown; chin and throat black; breast grey tinged with buff, more especially on the centre; flanks, abdomen and lower tail-coverts clear brownish ochraceous.

Colours of soft parts. Bill fleshy horny; irides hazel; legs plumbeous grey.

Measurements. Total length about 95 to 100 mm.; wing 50 to 52 mm.; tail 36 to 38 mm.

Distribution. Southern Shan States.

Nidification and Habits. Not recorded.

Genus PSITTIPARUS Hellmayr, 1903.

Blanford's name of *Scæorhynchus* being preoccupied, Hellmayr's name of *Psittiparus* must be used for this genus. It differs from *Neosuthora* in having the tail longer, about equal to the wing and still less graduated, the outermost feather, being nearly or quite five-sixths the length of the central ones. The bill is larger and longer in proportion. The 1st primary is a little more than half the length of the 5th, 6th and 7th, which are longest and subequal. The legs are exceptionally strong.

Key to Species and Subspecies.

A. Crown of head rufous; chin white.
  a. Wing under 90 mm.; bill from front to tip 14 mm. . . . . *P. ruficeps ruficeps*, p. 116.
  b. Wing 90 mm. or over; bill from front to tip 16 mm. . . . . *P. r. bakeri*, p. 117.
B. Crown of head grey; chin black.
  c. Wing over 90 mm.; under parts white. *P. gularis gularis*, p. 118.
  d. Wing under 90 mm.; under parts suffused with fulvous . . . . *P. g. transfluvialis*, p. 118.

(104) Psittiparus ruficeps ruficeps.

THE RED-HEADED PARROT-BILL.

Paradoxornis ruficeps Blyth, J. A. S. B., (1) ii, p. 177 (1842) (Bootan).
Scæorhynchus ruficeps. Blanf. & Oates, i, p. 68.

Vernacular names. *Chongto-phep-pho* (Lepcha).

Description. Head, nape, upper back, lores, cheeks and ear-coverts chestnut; upper plumage, tail and exposed parts of wings olive-brown, tinged with rufous; the whole lower plumage white, tinged with brown on the sides of the body, vent, thighs and under tail-coverts.

Colours of soft parts. Iris deep red-brown; upper mandible horny brown, lower fleshy-brown; eyelids and mouth slate-blue; legs dark plumbeous blue; claws horn-brown.

Measurements. Total length about 180 mm.; wing 84 to 86 mm.; tail about 85 mm.; bill "from forehead to tip in a straight line 14 mm." (*Hartert*); tarsus about 28 mm.

Distribution. Hills north of the Brahmaputra east to Sadiya. Nepal and Sikkim.

Nidification and Habits. Not distinguishable from those of the next subspecies. Seven eggs in my collection average 22·8 × 16·7 mm.

(105). Psittiparus ruficeps bakeri.

BAKER'S PARROT-BILL.

Scæorhynchus ruficeps bakeri Hartert, Nov. Zool., vii, p. 548 (1900) (Hungrum, N. Cachar).

Vernacular names. *Daomaogasha gajao* (Cachari); *Indo-rui Ingaoria* (Naga); *Vohtéra* (Mikir).

Description. Differs from the Red-headed Parrot-Bill in having the under parts tinged everywhere with buff and in being a little larger.

Measurements. Wing 90 to 95 mm.; tail about 95 mm.; bill from forehead to tip in a straight line 16 mm., and about 14 mm. deep as against 12 mm. in *ruficeps*.

Colours of soft parts as in *ruficeps*, but the bill is a darker horny-brown, more especially above, and the legs are generally quite a dark slate-blue.

Distribution. Hills south of the Brahmaputra, Chin Hills, Shan States through the hills of Central Burma to Tenasserim.

Nidification. This Parrot-Bill breeds principally in late May and early June, but eggs have been taken from the 15th April to the 24th July. The nest is composed of shreds of grass, shreds of bamboo leaves and the bark of reeds and bamboos, lined with finer grasses and strips of bark and bound together with cobwebs. In shape it is a deep, very well-built cup, externally about 3 to 4 inches broad and deep, whilst internally it is nearly an inch less each way. It may sometimes be placed in reeds and high grass, more often in bamboo clumps, but most nests will be taken from small saplings and high or low bushes. The height from the ground may be anything from 2 to 8 feet.

The eggs, either two or three in number, rarely four, remind one very much of those of the Garden-Warbler. The ground-colour is white tinged with green, grey or yellowish, sometimes reddish. The markings consist of spots, irregular blotches and cloudings of pale sienna-brown, reddish brown and neutral tint; these, never very numerous, are scattered indefinitely over most of the larger half of the egg; sometimes they are quite sparse and confined to the big end. Forty-five eggs average 21·5 × 16·7 mm.

Habits. Baker's Parrot-Bill is found at all heights between 2,000 and 5,000 feet, ascending some 1,000 feet higher than this in the summer and perhaps 1,000 feet lower in the winter. They wander about in parties of a dozen or so, seldom showing themselves except momentarily as they clamber through the grass or undergrowth. Occasionally they will visit the higher bushes and small trees in searching for insects but these they leave at once when disturbed. When feeding they utter a constant "chee-chirrup," but when separated from one another their call is

the typical bleat of the family. So curiously like is it to the plaintive bleat of a small kid in distress that I have more than once been deceived by it.

Whilst almost as active as the Titmouses in climbing about, they are much less so on the wing, for their flight is fluttering, ill-sustained and weak, nor do they ever take to wing unless compelled.

Their food is principally insectivorous, but they also eat a certain amount of seeds and even grain.

(106) Psittiparus gularis gularis.

THE GREY-HEADED PARROT-BILL.

Paradoxornis gularis Gray, Gen. Birds, ii, p. 389 (1845) (Sikkim).
Scæorhynchus gularis. Blanf. & Oates, i, p. 69.

Vernacular names. *Chongto-phep-pho* (Lepcha).

Description. Forehead, nasal plumes, a supercilium from the forehead to the nape and the chin black; lores and round the eye, cheeks and lower plumage white; flanks and sides of breast only slightly suffused with buff; ear-coverts pale grey; crown and nape dark grey; upper plumage, tail and visible portions of closed wing rufous-brown.

Colours of soft parts. Iris deep red-brown; bill chrome-yellow to an almost orange horny yellow; legs and feet slaty-brown, occasionally with a bluish tinge.

Measurements. Total length about 150 to 155 mm.; wing 90 to 95 mm.; tail about 80 mm.; tarsus about 27 mm.; culmen about 12 to 13 mm. long and about 10 to 11 deep.

Distribution. Sikkim and Bhutan and hills North of the Brahmaputra.

Nidification. Similar to that of *P. ruficeps bakeri*. The eggs measure about 21·0 × 15·2 mm.

Habits. Similar to the last.

(107) Psittiparus gularis transfluvialis.

HARTERT'S PARROT-BILL.

Scæorhynchus gularis transfluvialis Hartert, Nov. Zool., vii, p. 548 (1900) (Guilang, N. Cachar).

Vernacular names. *Daomougasha gophu* (Cachari); *Indoo-rui gahabale* (Kacha Naga).

Description. Differs from the Grey-headed Parrot-Bill in having the whole of the under parts suffused with fulvous and in being rather smaller.

Measurements. Wing 86 to 89·5 mm.; tail about 78 mm.; culmen 12 to 13 mm. long but only 9 to 9·5 mm. deep at the base; tarsus about 25 mm.

Distribution. Hills South of the Brahmaputra, Chin, Kachin Hills and hills of Central Burma.

Nidification. Cannot be distinguished from that of the Red-headed Parrot-Bill in any way. 38 eggs average 20·7 × 16·2 mm.

Habits. Similar to those of *P. r. bakeri*, but is perhaps not found at such low elevations. It occurred in the low hills round Margharita in Assam, but here the close proximity of the snow-line gives an avifauna and flora at 700 to 1,000 feet which obtains elsewhere at more than twice this height. It is curious that though all the Red-headed forms of Parrot-Bill consort together when feeding, none of the red-headed birds are ever found mixing with those of the grey-headed races.

Fig. 24.—*Sitta himalayensis.*

Family SITTIDÆ.

The family of *Sittidæ*, or Nuthatches, is one which it is not easy to place in any system of arrangement of the Order *Passeres.* Oates placed them between the Bulbuls (*Pycnonotidæ*) and the Drongos (*Dicruridæ*), with neither of which can they have any possible connection. Hartert places them between the *Certhiidæ* and *Paridæ*, an excellent position, but making these three families form a group entirely by themselves having no close connexion with those which come before or after. In the present work the preceding family, the *Paradoxornithidæ*, is an obvious link between the *Paridæ* and the *Timaliidæ*, and a position between these families seems, perhaps, the best for the *Sittidæ*. In many ways they are closely allied to the Tits, especially anatomically, and though they have not such close affinities with the *Timaliidæ*, they may well be an offshoot from the *Paridæ*, the other end of

which has no visible link with any of the other families of *Passeres* in the area we cover, whilst the *Timaliidæ* are another development in a different direction.

In this family the edges of the upper mandible are smooth, or the upper one simply notched; the hinder aspect of the tarsus smooth, composed of two entire longitudinal laminæ and other features as already given in the key to the Families. The nostrils are overhung by some hairs and the rictal bristles are present; the feet are very strongly developed for the purpose of climbing, the hind toe and claw are very powerful and the inner toe and claw dwarfed; the bill is about as long as the head, fairly stout and straight. The wing is long and pointed and the first primary is always less than half the second. The tail is short and square or very slightly rounded. The sexes are dissimilar.

Only one genus of Nuthatch, *Sitta*, is found within our limits. The little Velvet-fronted Nuthatch is sometimes separated under the name *Dendrophila* but without any very apparent reason or necessity. I follow Oates in uniting them all under one name.

Genus **SITTA** Linn., 1766.

The characters of the genus are those of the family.

Key to Species and Subspecies.

A. Upper plumage uniform bluish grey.
- *a.* Middle pair of tail-feathers white at base.
  - *a'.* Sides of neck and lower plumage chestnut .... *S. himalayensis*, p. 122.
  - *b'.* Sides of neck white, marked with golden chestnut: chin, throat and upper breast white .... *S. victoriæ*, p. 123.
- *b.* Middle pair of tail-feathers uniform, with no white.
  - *c'.* Lateral tail-feathers with white spots.
    - *a''.* Under tail-coverts chestnut, centred ashy.
      - *a'''.* Lower plumage paler; wing over 80 mm. .... *S. kashmiriensis*, p. 128.
      - *b'''.* Lower plumage darker; wing under 80 mm. .... *S. castaneiventris castaneiventris*, p. 123.
    - *b''.* Under tail-coverts white, tipped chestnut.
      - *c'''.* Lower plumage chestnut.
        - *a*[1]. Chestnut of lower plumage uniform from throat to vent .. *S. c. cinnamoventris*, [p. 125.
        - *b*[1]. Throat and breast paler than rest of lower plumage ...... *S. c. neglecta*, p. 126.
      - *d'''.* Lower plumage grey .... *S. europæa nagaensis*, [p. 127.
    - *c''.* Under tail-coverts chestnut, tipped white .... *S. magna*, p. 128.
  - *d'.* Lateral tail-feathers without white spots .... *S. neumayer tephronota*, [p. 129.

B. Upper plumage slaty-blue; crown black .. *S. leucopsis leucopsis*, [p. 130.
C. Upper plumage black, streaked with brilliant blue .... *S. formosa*, p. 131.
D. Upper plumage uniform purplish blue; forehead black .... *S. frontalis frontalis*, [p. 132.

(108) Sitta himalayensis.

The White-tailed Nuthatch.

Sitta himalayensis Jard. & Selby, Ill. Ind. Orn., iii, pl. 144 (1835); Blanf. & Oates, i, p. 300.

Vernacular names. *Siddyi-phip* (Lepcha).

Description.—Adult male. The forehead, lores, a streak behind the eye, produced down the side of the neck to the shoulders, black; an indistinct eyebrow fulvous white; upper plumage, wing-coverts and inner secondaries dark slaty-blue, somewhat paler on the ends; primaries and outer secondaries dark brown edged with slaty-blue; middle pair of tail-feathers slaty-blue, the basal half of the inner web and a band next the shaft on the outer web white; the next two pairs wholly black; the next pair black with an ashy tip; the next black with an oblique white band and an ashy tip, the outermost the same but with more white; sides of the face and chin pale fulvous; lower plumage chestnut, richer and deeper on the flanks and under tail-coverts; under wing-coverts black, a white patch on the base of the primaries showing from below only.

Adult female. Resembles the male, but is rather duller and paler.

Colours of soft parts. Iris pale brown; bill black, the gape and base of lower mandible bluish white to pale slaty; legs and feet yellowish or olive-brown.

Measurements. Length about 120 mm.; wing 71 to 76 mm.; tail about 37 to 41 mm.; tarsus about 17 to 18 mm.; culmen about 14 to 15 mm.

Distribution. The Himalayas from Kangra to Assam North of the Brahmaputra River, but in over twenty years' collecting we never found it South of the river, and there may be some mistake in Godwin-Austen's record from Aimul in Manipur.

Nidification. The White-tailed Nuthatch breeds in the Himalayas from 5,000 feet to at least 11,000, at which height Blanford procured it in Sikkim. It is a very early breeder, commencing to lay in the first few days of April or even in the end of March. The eggs are laid in some natural hollow in a tree or stump, the entrance being filled in neatly with mud so as to leave only a small, quite circular entrance, little over an inch in diameter. The nest is a pad of moss, or moss and moss-roots with a depression in the centre for the eggs. These number from four to six and are white with numerous specks and spots of reddish, sometimes more

sparse and confined to the larger end. They measure about 18·3 × 14·0 mm.

Both parents, according to Hodgson, assist in incubation and in looking after the young.

Habits. The habits of most Nuthatches are very similar. In the non-breeding season they are to be found in family parties, sometimes in greater numbers, hunting all over the trunks and branches of trees for insects; scuttling about upwards and downwards, now under, now over, peering into every cranny and every broken bit of bark as they restlessly work their way from the trunk of the tree to the highest branches, whence they take flight to the nearest tree likely to prove a profitable hunting-ground. They also feed on nuts, including the hardest, boring holes into them and extracting their contents, and they sometimes eat seeds and fruits. Their note when feeding is singularly like the cheep of a mouse and is frequently uttered. The flight is fairly strong and direct.

(109) Sitta victoriæ.

THE CHIN HILLS NUTHATCH.

Sitta victoriæ Rippon, Bull. B. O. C., xiv, p. 84 (1904) (Mt. Victoria).

Vernacular names. *Hnet-pya-chouk* (Burmese).

Description. Similar to the last bird, but has the chin, throat, upper breast and centre of the abdomen white; the sides of the face and neck pure white, the latter marked with golden chestnut.

Colours of soft parts. Iris red-brown; bill slaty-grey, black at the tip; legs dull yellowish brown.

Measurements. Wing 68 to 72 mm.; tail about 40 mm.; culmen 14 mm.

Female is apparently similar to the male.

Distribution. Chin Hills. Mt. Victoria.

Nidification and Habits. Nothing recorded, found at 9,000 feet. This bird should probably be placed as a subspecies of *S. himalayensis*, but until some connecting forms are discovered it must rank as a species.

(110) Sitta castaneiventris castaneiventris.

THE CHESTNUT-BELLIED NUTHATCH.

Sitta castaneiventris Frank., P. Z. S., 1831, p. 121 (Vindhyan Hills) Blanf. & Oates, i, p. 304.

Vernacular names. *Siri* (Hind.); *Chor-parki* (Beng.).

Description.—Adult male. A black streak from the nostril

through the eye to the shoulder; lores, cheeks, ear-coverts and chin white; the whole upper plumage and visible portions of closed wing slaty-blue; middle tail-feathers ashy-blue; the next two black, edged and tipped with ashy-blue; the others with a subterminal white patch on the inner webs and generally with a white band on the outer web of the outermost feathers; whole lower plumage uniform dark chestnut-bay; under tail-coverts chestnut, centred with ashy; under wing-coverts black; a white patch on the base of the primaries visible from below.

Female is a paler chestnut below and the white on the face is ill-defined.

Colours of soft parts. Iris dark brown; bill greenish or bluish plumbeous, the terminal half black and lower mandible and base paler; legs and feet greenish plumbeous. In some specimens nearly the whole bill is black.

Measurements. Length about 130 mm.; wing 74 to 76 mm.; tail about 37 mm.; tarsus about 17 to 18 mm.; culmen about 15 to 17 mm.

Distribution. The whole of the northern plains of India as far south as the Wynaad, as far west as Umballa and Khandesh and as far east as Calcutta. I obtained it both in Nadia and the 24th Parganas, where however it is very rare. In Behar it is extremely common to the east.

Nidification. This little Nuthatch breeds principally in February and March throughout its range, making its nest in small holes in trees at any height from 10 to 30 feet from the ground. A very favourite nesting-site is in mango-trees in branches between 8 and 12 feet from the ground, and the natural hollow is always cemented round with clay to reduce the entrance to about 30 mm. This masonry work is also often continued well down inside the hollow and on the bark outside the tree as well and, even when the natural entrance to the hole is in no way too big, it is nearly always made neat and tidy with a clay finish. The nest is generally nothing but chips of dried bark and soft tinder-wood with a few leaves and rarely a little dried moss. The eggs number anything from two to six, most often five and are rather fragile, broad oval in shape and of the usual white ground with red specks. They average about 17·0 × 13·2 mm. Many birds must breed twice in the year, as nests may be taken in May and June and even as late as September.

Habits. The Chestnut-bellied Nuthatch is entirely a plains' bird and is very common in all well-wooded parts, though it is not a forest bird. Mango-topes both in the vicinity of, as well as away from, villages are very favourite resorts and two or more pairs may often be found in the same orchard. They have the usual restless habits of the genus and feed on the same kind of food.

SITTA C. CINNAMOVENTRIS.
The Cinnamon-bellied Nuthatch.
2/3 life size.

(111) Sitta castaneiventris cinnamoventris.

THE CINNAMON-BELLIED NUTHATCH.

Sitta cinnamoventris Blyth, J. A. S. B., xi, p. 439 (1842) (Darjeeling).
Sitta cinnamomeoventris. Blanf. & Oates, i, p. 301.

Vernacular names. *Siri* (Hind.); *Sidhyi-phip* (Lepcha); *Dao-mojo-gajao* (Cachari).

Description.—Adult male. Like the last but the white parts of the face are delicately barred with brown; the upper plumage is more an ashy-blue, the under parts are a deep cinnamon-chestnut and the under tail-coverts are white with ashy bases and narrow chestnut tips.

Female. Differs from the male in being a pale dull chestnut below.

Fig. 25.—Head of *S. c. cinnamoventris*.

Colours of soft parts. Iris red-brown to lake; bill slaty-blue, black at the tip and paler on base and lower mandible; legs and feet dull blue-grey or bluish plumbeous.

Measurements. Total length about 150 mm.; wing 78 to 81 mm.; tail about 45 mm.; tarsus about 18 mm.; culmen about 20 mm.

Distribution. The Himalayas from Murree to Eastern Assam, both North and South of the Brahmaputra, Manipur, Lushai and Chittagong hill-tracts, but not further East. Oates's specimens from Bhamo are much nearer *neglecta* and should be assigned to that bird.

Nidification. Gammie obtained the nest in Sikkim at 2,000 feet in a decayed bamboo, and I found many nests in the Khasia Hills in April and May at elevations between 4,500 and 6,000 feet. In these hills, although a nest might now and then be found in some old stump, the great majority are built in the retaining walls of roads or in walls of fields and compounds. These walls are built of mud and stones and form favourite breeding places for Tits, Nuthatches, Flycatchers and many other birds. The Nuthatches select some hollow, generally only a few inches from the ground, and then fill the whole entrance in with mud, leaving only a circular hole about 40 mm. across. The hollow inside, however big it may be, is filled to a depth of some inches with scraps of dead wood, bark and odds and ends of vegetable matter, over which is placed a bed of moss and then a fine thick layer of fur, or fur and wool. They are very persistent

little birds, and will often repair and again lay in a nest which has been pillaged. In North Cachar I found them breeding in trees, and in these the nests were often very flimsy and scanty, consisting of leaves and rubbish and perhaps a little moss and a few feathers or scraps of fur. They lay in April and May, but an occasional nest may be seen as early as March or as late as June. The normal full complement of eggs is six, but sometimes only four or five are laid and sometimes as many as eight. They are of the usual white ground with red specks, but are more strongly and numerously marked than those of the last bird and in shape are much longer, narrower ovals. Sixty eggs average 19·8 × 14·1 mm. The maxima are 21·0 × 14·4 and 20·6 × 15 mm., and the minima are 17·3 × 13·6 and 18·8 × 13·2 mm.

Habits. This Nuthatch is most common between 4,000 and 7,000 feet and is not often found below 3,000 feet. It has much the same habits as the rest of the genus, but I have often noticed it on the ground feeding on ants and termites, and it seems very partial to hunting walls, cliffs and banks as the Rock-Nuthatches do. Its note is a continual cheep, very much like the squeak of a mouse. It is a very sociable bird, and I have seen flocks of this bird and *Sitta frontalis* hunting together in perfect amity.

(112) Sitta castaneiventris neglecta.

THE BURMESE NUTHATCH.

Sitta neglecta Wald., A. M. N. H., (4) v, p. 218 (1870) (Karen Hills); Blanf. & Oates, i, p. 301.

Vernacular names. *Pan-che-lip* (Kachin).

Description Differs from the preceding in being smaller and in having the throat and breast much paler than the abdomen and flanks, whilst the white of the sides of the head blends with the rufous of the throat. The female differs in the same way from the female of the Cinnamon-bellied Nuthatch.

Colours of soft parts. Iris brown; upper mandible bluish, tipped black; legs and feet dark plumbeous, claws horn-colour.

Measurements. Length about 130 mm.; wing 75 to 78 mm.; tail about 38 to 42 mm.; tarsus about 18 mm.; culmen about 17 mm.

Distribution. From Muleyit Mountain in South Tenasserim, through the eastern hill-ranges of Burma to the Bhamo Hills, N. and N.W. Siam.

Nidification. Similar to that of *S. c. castaneiventris*, but this is a forest bird and its nest is found in the natural hollows of trees on the outskirts of forest or in dead trees in deserted clearings. The eggs are of the usual short, blunt type and measure from 16·2 × 13·4 to 18·3 × 14·2 mm.

They are apparently early breeders; Bingham found the young

hatched in the end of March, and eggs sent me by Col. Harington, taken on the 22nd of that month, were on the point of hatching.

Habits. Those of the genus, and there seems to be nothing calling for notice. They are found between 2,000 and 5,000 feet, never in the plains, and are forest birds, though like most Nuthatches they keep to the more open parts, the outskirts, or to partially cleared or deserted cultivation clearings in which the dead trees are still standing.

(113) Sitta europæa nagaensis.

AUSTEN'S NUTHATCH.

Sitta nagaensis Godw.-Aust., P. Z. S., 1874, p. 44 (Sopremak, Naga Hills); Blanf. & Oates, i, p. 302.

Vernacular names. *Daomojo-gophu* (Cachari); *Hnet-pya-chouk* (Burmese).

Description. Upper plumage, closed wings and central tail-feathers slaty-blue-grey; a black line from the bill, through the eye to the nape; primaries and secondaries black on the inner webs; outer tail-feathers black, the three or four outer pairs with a white subterminal spot on the inner web and the outermost pair with an oblique white band on the outer edge; sides of the head and neck and lower plumage grey; sides of the body rich chestnut; lower tail-coverts white tipped and edged with chestnut; the usual white patch on base of quills.

The female only differs in being a trifle duller.

Colours of soft parts. Iris dark brown, bill slaty-grey, the terminal half blackish; legs and feet greenish brown.

Measurements. Length about 130 mm.; wing 74 to 78 mm.; tail about 40 mm.; tarsus about 18 mm.; culmen about 15 mm.

Distribution. Hills South of the Brahmaputra, Chin Hills and Kachin Hills. Kinnear's *Sitta e. griseiventris* (Bull. B. O. C. lx, p. 142, 1920) seems to be the same as this bird. It is possibly a purer grey, but as all the specimens of Austen's Nuthatch in the British Museum are very poor specimens and some of the Chin Hills birds taken elsewhere are quite indistinguishable, I consider this name to be merely a synonym of *nagaensis*.

Nidification. This Nuthatch breeds in the Kachin Hills in April and probably also March and May. Eggs taken by Col. Harington were placed in the usual kind of holes in trees and were plastered up with clay masonry, reducing the entrance to a size just sufficient to allow ingress and egress to the parents. The nests were of moss with a lining of fur, and contained two to four eggs just like those of *S. c. castaneiventris* and measuring about $18{\cdot}9 \times 14{\cdot}1$ mm.

Habits. This is a forest form found up to the highest hills, 9,000 or 10,000 feet and apparently down to about 5,000 feet, below which *S. c. neglecta* takes its place.

(114) Sitta kashmiriensis.

BROOKS'S NUTHATCH.

Sitta kashmiriensis Brooks, P. A. S. B., 1871, p. 279 (Kashmir); Blanf. & Oates, i, p. 303.

Vernacular names. None recorded.

Description. Upper plumage and wings slaty-blue; the usual black band through the eye; chin and sides of the face dull white tinged with fulvous; throat more fulvous, the lower plumage gradually becoming deeper and turning to deep chestnut on the abdomen, flanks and under tail-coverts; middle tail-feathers ashy-blue, the next two pairs black edged and tipped with ashy; the next two black with a subterminal white spot on the inner web; the outermost feather black, with a white patch on each web and a brown tip; under wing-coverts blackish with the usual white primary patch; under tail-coverts chestnut with traces of ashy centres.

Colours of soft parts. Iris red or red-brown; bill slaty-grey with black tip and paler base; legs greenish brown, yellowish brown or dull grey-brown.

Measurements. Length about 130 mm.; wing 81 to 85 mm.; tail about 40 to 44 mm.; tarsus about 18 mm.; culmen about 18 to 19 mm.

Distribution. Himalayas, Afghanistan to Garhwal.

Nidification. This bird breeds in some numbers throughout Kashmir and in the Murree Galis. It selects holes in forest-trees at all heights from the ground, plastering up the entrance with the usual hard clay masonry and laying its eggs in April and May. These number four to seven and are quite typical. Fifty eggs average about 19·7 × 16·4 mm.

Habits. Those of the genus. This is a forest bird, haunting rather deep forest at heights between 6,000 and 9,000 feet, straggling both lower in the cold and higher in the hot weather. Whitehead found it fairly common in the Safed Koh between 7,500 and 10,000 feet.

(115) Sitta magna.

THE GIANT NUTHATCH.

Sitta magna Wardl.-Ramsay, P. Z. S., 1876, p. 677 (Karennee); Blanf. & Oates, i, p. 303.

Vernacular names. None recorded.

Description. Upper plumage, wings and central pair of tail-feathers slaty-blue; two broad bands of black from the base of the bill through the eyes to the shoulders; two pairs of tail-feathers next the central pair black with a slaty-blue tip, the next two the same with a subterminal white patch and the outermost the same but with a white bar on the outer web; lores, sides of the

head, chin and throat greyish white changing to darker grey on breast and to dull chestnut on lower flanks, thighs, vent and under tail-coverts, the latter broadly tipped with white; under wing-coverts black and the under surface of the primaries with the typical white patch.

Colours of soft parts. Iris brown or hazel-brown; bill slaty-blue, darker on terminal half; legs and feet pale yellowish brown.

Measurements. Length about 200 mm.; wing 114 to 119 mm.; tail about 68 to 70 mm.; tarsus about 23 mm.; culmen about 25 to 28 mm.

The female is like the male but has a more decided tinge of buff or chestnut-buff on the breast, the chestnut of the flanks, thighs, etc., may not be quite so deep and the head also is greyer in some individuals.

Distribution. Hills of Central Burma, Shan States and Yunnan, apparently from about 3,000 feet upwards.

Nidification and Habits. There is nothing on record about this fine Nuthatch, now represented by good series from Rippon, Thompson and Craddock in the British Museum. It has been found so far between 4,000 and 6,000 feet and seems to be a forest bird.

(116) Sitta neumayer tephronota.

THE TURKESTAN ROCK-NUTHATCH.

Sitta tephronota Sharpe, A. M. N. H., (4) x, p. 450 (1872) (Ferghana, Turkestan); Blanf. & Oates, i, p. 305.

Vernacular names. None recorded.

Description. Whole upper plumage, wing-coverts and secondaries ashy-blue; the usual black eye-band; primaries pale brown; central tail-feathers pale ashy-blue, the others brown broadly edged with pale ashy on the outer webs, this colour gradually changing to pale fulvous, the outermost feather having the inner web brown with a fulvous tip and the outer web fulvous with a brown tip; sides of the head and lower plumage fulvous, darker and becoming strongly tinged with pink on the flanks, lower abdomen, vent and under tail-coverts, these last having ashy centres.

Colours of soft parts. Iris brown; bill horny-brown or slaty-brown, darker at the tip; legs clay-slate.

Measurements. Length about 160 to 170 mm.; wing 75 to 90 mm.; tail about 50 to 60 mm.; tarsus 21 to 24 mm.; culmen 20 to 23 mm.

Distribution. Baluchistan and Afghanistan to Ferghana in Turkestan and the Tianschan. Birds from the Tianschan seem to have more of a dull rufous tinge on the breast and lower throat as well as being rather bigger, and should possibly be kept separate; I cannot, however, distinguish *S. n. obscura* from North and East Persia.

Nidification. This bird breeds both in Afghanistan and Baluchistan from early March to the end of April or early May. The nest-hole may be either in a tree or in a rock but in the very great majority of cases it will be in the latter. The hole is lined, sometimes partially, sometimes throughout, with a clay which becomes very hard when set, and this lining is continued until it projects in a cone beyond the entrance for from 6 to 9 or 10 inches. In addition to this, however, the bird decorates the face of the rock or the bark of the tree all round the entrance for some distance with feathers stuck in the crevices of the rock or bark. The lining to the nest is generally fur or hair, sometimes with a few feathers, but underneath this is often a bed of leaves, chips of bark, touch-wood or similar material. The eggs vary from four to six or rarely seven in number; the ground is a white of a purer, harder tint than that of most Nuthatches and the spots of brown are sparser and more definite. They are generally rather scanty in number but more numerous at the larger end than elsewhere. The normal shape is a broad, blunt oval, and twenty-four Indian eggs average about 21·2 × 16·0 mm. These were all taken by General Betham at Quetta.

Habits. This bird is common in Baluchistan, where Betham took many nests, and extends in some numbers along the frontier in suitable localities between 3,000 and 7,000 feet, ascending yet higher than this in the northern portion of its range. In general habits, flight, voice and food it is a typical Nuthatch, but rocks form its principal hunting-ground rather than trees, though it does resort to these also on occasions. It is never, however, a forest bird and frequents bare hillsides with but little cover of any sort just as often as it does those a little less bare which have a few scattered trees and an odd ravine or so with bush or tree forest. It is said not to be a shy bird or to shun observation.

(117) Sitta leucopsis leucopsis.

The White-cheeked Nuthatch.

Sitta leucopsis Gould, P. Z. S., 1840, p. 113 (Himalayas); Blanf. & Oates, i, p. 306.

Vernacular names. None recorded.

Description. Forehead, crown, nape and a part of the sides of neck glossy black; upper plumage, closed wings and central tail-feathers slaty-blue; other tail-feathers black, tipped with slaty-blue, the three outer pairs with a subterminal white patch on the inner web and the outermost pair with a white band also on the outer web; sides of the head and lower plumage white, more or less tinged with pale fulvous; flanks and under tail-coverts rich chestnut. Sexes alike.

Colours of soft parts. Iris hazel-brown to dark brown; bill black, the base of the lower mandible whitish-horny or pale grey-horny; legs yellowish- or greenish-brown.

Measurements. Total length about 140 mm.; wing 74 to 79 mm.; tail about 42 mm.; tarsus about 18 mm.; culmen about 15 mm.

Distribution. The whole of the North-West Himalayas from the Baluchistan boundaries where well forested, Afghanistan, N. Kashmir to the hills next the plains as far as the pines continue and as far east as Garhwal.

Nidification. This Nuthatch breeds freely throughout its range. Rattray took many nests in the Murree Hills in June, and says that a favourite site is high up in a tall fir-tree that has been struck by lightning and cracked down the centre, a convenient place in this crack being selected for the nest. They lay from four to eight eggs, which are just like those of the various forms of Chestnut-bellied Nuthatches and measure on an average for 50 eggs about 18·2 × 13·7 mm. The nest is difficult to find, both from its position and the cautious habits of the birds.

Habits. This is a bird of high elevations, being found principally between 7,000 and 12,000 feet and, according to Rattray and others, seldom below 8,000 feet. Its range, however, seems to be decided by the forest growth and it will not frequently be found outside the regions of firs, pines and other coniferous trees. Stoliczka says that it feeds principally on the seeds of *Pinus girardiana* and that its voice is a loud, uniform, melancholy call, uttered while it is busily engaged in securing a pine-seed in the bark of a large tree. Whitehead likens its call to the French word "pain," and he and Davidson both say that the monotonous, wailing cry is to be heard in the forests all day long.

(118) Sitta formosa.

The Beautiful Nuthatch.

Sitta formosa Blyth, J. A. S. B., xii, p. 938 (1843) (Darjiling); Blanf. & Oates, i, p. 306.

Vernacular names. *Dao-mojo-gadeba* (Cachari); *Tishe Kuyi gumbo* (Lepcha).

Description. Upper plumage black, streaked with pale blue on the upper back and the sides of the neck and with brilliant cobalt-blue elsewhere; sides of the head and chin fulvous white, the feathers round the eye and over the ear-coverts blackish at their bases; lesser wing-coverts, primary-coverts, primaries and secondaries bright blue; edges of the median and greater coverts and of the inner secondaries white; remainder of wing blue; scapulars, lower back and rump verdigris-blue; central tail-feathers blue with black bases and black next the shafts; the next two pairs black edged with blue; the others black with progressively larger white tips, blue-edged on the exterior margins; lower plumage dull chestnut.

Colours of soft parts. Iris red-brown or dark brown; bill black with base and gonys black; legs greenish horny (*Jerdon*) or yellowish brown.

Measurements. Length about 185 mm.; wing 114 to 118 mm.; tail about 58 to 60 mm.; tarsus about 21 mm.; culmen about 17 mm.

Distribution. Himalayas from Sikkim to the Miri and Arbor Hills in Eastern Assam. Also hill-ranges in South Assam as far East as Lakhimpur. The Salween-Mekong watershed in the N.E. Shan States.

Nidification. The few nests found by me in the Khasia and North Cachar Hills were all on the highest ranges from 5,000 feet upwards. They were placed in trees at considerable heights from the ground and contained from four to six eggs or young. The eggs only vary from those of *S. c. cinnamoventris* in being larger and broader ovals. Sixteen eggs average 20·6 × 15·2 mm. and vary between 18·0 × 14·7 and 22·6 × 15·8 mm.

Habits. The Beautiful Nuthatch, well named from its lovely colouring, seems to be a rare bird everywhere. I never saw it but in pairs or in family parties after the young had hatched, and it is the most shy and elusive of all the Nuthatches found in Assam. Its actions when on trees, rather slow and deliberate for this genus, reminded one of Woodpeckers and its note also differed from all other Nuthatches in its low, rather sweet tone. On the wing it was exceptionally swift, and its beauty when the sun caught it in flight could only be likened to that of the Ruddy Kingfisher under similar circumstances.

(119) Sitta frontalis frontalis.

The Velvet-fronted Nuthatch.

Sitta frontalis Horsf., Trans. Linn. Soc., xiii, p. 162 (1821) (Java); Blanf. & Oates, i, p. 307.

Vernacular names. *Dao-mojo-buku-gajao* (Cachari).

Description. Forehead and supercilium black; whole upper plumage and exposed parts of wings and tail purplish blue; inner webs of all primaries, outer webs of the first two and concealed portions of rectrices blackish brown; ear-coverts lilac; chin and throat whitish; lower plumage greyish, more or less suffused with dull lilac.

Colours of soft parts. Iris yellow, brown in the young and sometimes in the adult female; eyelids plumbeous; bill coral-red, black in the quite young with a pinkish gape and base; legs fleshy-brown or reddish brown, never red.

Measurements. Total length about 125 to 130 mm.; wing 70 to 75 mm.; tail about 40 mm.; tarsus 17 to 18 mm.; culmen 12 to 13 mm.

SITTA F. FRONTALIS.
The Velvet-fronted Blue Nuthatch.
2/3 life size

Female differs from the male in having no black supercilium and, like the rest of the genus, in being a trifle smaller.

Distribution. Ceylon, the whole of India west of Bombay, Gwalior and Kumaon ; Assam, practically the whole of Burma in suitable localities, Siam, Malay Peninsula to Java.

Nidification. This little Nuthatch breeds all over its habitat, chiefly between 1,000 and 4,000 feet elevation. In the southern portions of both Burma and India it lays in February and March, but in the northern districts it does not lay until April, continuing through May and even into June. It selects some natural hollow or one made and deserted by a Barbet or Woodpecker. Though it very seldom uses clay to reduce the size of the entrance, it does, on the other hand, often enlarge crevices sufficiently to allow it to make its nest in some enviable hollow. The nest itself is made of moss, generally green and fresh, worked into a solid pad, and above this may be fur, fur and feathers or, very rarely, feathers alone. This lining or superstructure is always soft and plentiful, almost hiding the eggs which number from three to six. These are typical Nuthatches' eggs, but are rather more densely and uniformly covered with blotches than is usual and they are also longer ovals in shape than are those of most Nuthatches. Fifty eggs average 17·2 × 13·2 mm. and the extremes are : maxima **18·0** × 13·4 and 17·9 × **13·8** mm., minima **16·0** × **12·3** mm.

Habits. The Velvet-fronted Nuthatch is a bird of the plains and lower hills where there are forests and woods, but it is not found in quite open tracts and sparsely wooded areas. It frequents both the higher and smaller trees in flocks of half-a-dozen to a dozen or more, and is the quickest and most active of all the Nuthatches in its ways. Its note is a constant mouse-like cheep.

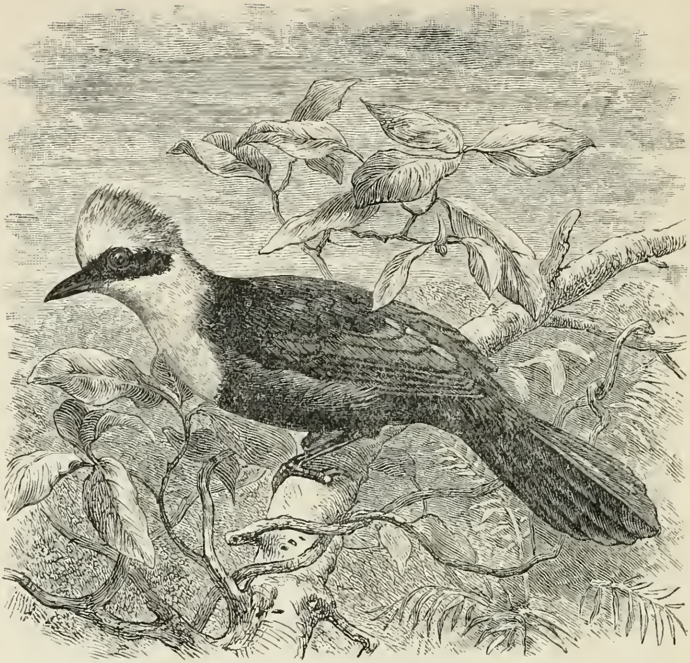


Fig. 26.—*Garrulax l. leucolophus.*

Family TIMALIIDÆ.

The intrinsic muscles of the syrinx fixed to the ends of the bronchial semi-rings; the edges of both mandibles smooth or the upper one with a notch; hinder aspect of tarsus smooth, bilaminated; wing with ten primaries; tongue non-tubular; nostrils clear of the line of forehead, the lower edge of the nostril nearer to the commissure than the upper edge is to the culmen; plumage of the nestling like that of the adult female but paler; nostrils never entirely concealed from view although frequently covered by hairs or bristles; rictal bristles present; rectrices twelve; inner and hind toes equal in length.

The Family *Timaliidæ* contains a very large number of birds, nearly all tropical and subtropical, which Oates called *Crateropodidæ* and which Harington raised to the rank of a suborder which he called *Timeliides.* There are, of course, no grounds for this, as the *Timaliidæ* are so close to other families that some ornithologists include with them such groups as the Thrushes and others. From these, however, they seem to me to be

sufficiently differentiated by the plumage of the young. As regards the name for the family, we cannot use *Crateropodidæ* for *Crateropus*, the name used by Oates for a genus of Babblers, is preoccupied, and we must therefore discard this also for the family. *Timaliidæ* from the genus *Timalia* of Horsfield 1821 may therefore be taken as the family name.

Since the first volume of the 'Avifauna of British India' was published, our knowledge of the *Timaliine* birds has advanced considerably, and many alterations and eliminations, with a few additions, are imperative.

In the first place, the subfamily *Brachypteryginæ* must be removed to a place near the Thrushes, the spotted plumage in the young birds making it impossible to retain them in the present group. The genus *Zosterops*, again, appears to have no close connection with the Babblers and must form a family of its own, more properly placed near the *Dicæidæ*. The Bulbuls differ from the true Babblers in their shorter tarsi and longer wings, and would seem also to form a fairly well-marked family already frequently differentiated as the *Pycnonotidæ*. Other genera and species which must be removed are *Melanochlora* to the Titmouses, *Paridæ*, *Leptopœcile* and *Cephalopyrus* to the *Regulidæ* and *Psaraglossa* to the Starlings.

There are, however, other birds of which the position is still very doubtful. Thus the genera *Turdinulus* and *Rimator* are Wren-like in many respects though they possess very small rictal bristles. *Ægithina* and *Aethorhynchus* have a summer and winter plumage, differing in this respect from all other Babblers; *Chloropsis* is perhaps nearer the *Pycnonotidæ* than the *Timaliidæ*, whilst *Chalcoparia* is undoubtedly a Sun-bird, though an aberrant one. So also the long-winged, thrush-like *Irena* can have no connection with this family and Oberholser seems right in placing it in a family by itself.

When we come to dividing the *Timaliidæ* into subfamilies in order to facilitate students' work, we are met with many difficulties. The differences relied on by Oates and Harington are often purely individual, varying greatly in degree in different genera. It cannot be either useful or scientific to depend on noisiness and similar characteristics as guides to classification and, though the coloration of birds' eggs may help greatly in giving us hints as to their position in the Avifauna, we cannot rely on this exclusively as a sufficient ground for differentiation.

The only three subfamilies I now retain may be diagnosed as follows:—

Key to Subfamilies.

A. Sexes alike.
- *a.* Legs and feet very powerful; wings short and rounded; habits mainly terrestrial .. *Timaliinæ*, p. 136.
- *b.* Legs and feet less powerful; wings short and rounded; habits principally arboreal .... *Sibiinæ*, p. 294.

B. Sexes dissimilar .... *Liotrichinæ*, p. 326.

Subfamily TIMALIINÆ.

This subfamily, as now constituted, contains Oates's *Crateropodinæ* and the *Timaliinæ*, which I find quite impossible to differentiate by any satisfactory character one from the other.

The great majority of the *Timaliinæ* are very gregarious and go about in flocks of considerable size, a few consort in small flocks, whilst fewer still are only found singly or in pairs. They feed principally on the ground or in bushes and long grass close to it, but some of them also haunt trees in their quest for the insects which form their main diet. Some of the genera comprise birds as noisy as any known, whilst others are birds with sweet notes or are silent. The most prominent characteristics are the very powerful legs and the weak, rounded wings. The head is frequently fully crested, and is generally covered with somewhat erectile feathers even where there is no definite crest. The bill is of almost every conceivable shape. In habits they are non-migratory, though some of the hill forms move up and down the hills under climatic stress and, whilst some species are very bold and haunt freely the vicinity of villages, others are among the most shy.

In the following key an attempt has been made to discriminate between the genera in a way which will be easy for the field naturalist to work out; size and plainly visible features in construction being made use of.

Key to Genera.

A. Tail more than 88 mm. long.
- *a*. Bill not so long as head.
  - *a'*. Nostrils almost hidden by bristles .... DRYONASTES, p. 138.
  - *b'*. Nostrils visible and only partly concealed by bristles .... GARRULAX, p. 145.
  - *c'*. Nostrils not hidden by bristles but sometimes with a few long hairs.
    - *a''*. Bill not toothed at the extremity.
      - *a'''*. Tail tipped with white or brown . IANTHOCINCLA, p. 155.
      - *b'''*. Tail with no white or brown tip.
        - a^4. Bill long and slender.
          - a^5. Wing longer than tail........ STACTOCICHLA, p. 186.
          - b^5. Wing shorter than tail.
            - a^6. Shafts of feathers of forehead short and not glistening .. TURDOIDES, p. 190.
            - b^6. Shafts of feathers of forehead long and glistening.
              - a^7. Upper parts uniform, not streaked.
                - a^8. Feathers of breast not spinous .... ARGYA, p. 196.
                - b^8. Feathers of breast spinous................ ACANTHOPTILA, p. 203.
              - b^7. Upper parts striated .... BABAX, p. 187.
        - b^4. Bill short and thick .... GRAMMATOPTILA, [p. 184.

b″. Bill toothed at the extremity.
c‴. Bristles at gape stiff; under parts whitish .... GAMPSORHYNCHUS, [p. 230.
d‴. Bristles at gape hair-like; under parts parti-coloured .... TROCHALOPTERUM, [p. 161.
b. Bill longer than head and much compressed.
d′. Bill less than 50 mm. long .... POMATORHINUS, [p. 205.
e′. Bill more than 50 mm. long .... XIPHIRAMPHUS, [p. 224.
B. Tail less than 88 mm. long, more than 45 mm.
c. Wings short and rounded and fitting in close to the body.
f′. Shafts of feathers of forehead stiff.
c″. Tail longer than wing.
e‴. Shafts of feathers of crown not glistening .... PYCTORHIS, p. 233.
f‴. Shafts of feathers of crown glistening.
c^4. Bill black and stout .... TIMALIA, p. 225.
d^4. Bill pale-coloured and more slender DUMETIA, p. 228.
d″. Wing longer than tail.
g‴. Nostrils rounded and exposed.
e^4. Crown dark brown or blackish .. RHOPOCICHLA, p. 281.
f^4. Crown rufous or rufous-brown .. MIXORNIS, p. 272.
h‴. Nostrils protected by overhanging membrane.
g^4. Wing over 70 mm. .... THRINGORHINA, [p. 261.
h^4. Wing under 65 mm.
c^5. Culmen curved throughout its length.
c^6. Space round the eye feathered STACHYRIS, p. 263.
d^6. Space round the eye naked.. CYANODERMA, p. 271.
d^5. Culmen straight and bill wedge-shaped.................... STACHYRIDOPSIS, [p. 267.
g′. Shafts of feathers of forehead not stiff-shafted.
e″. Bill stout and straight, deeper at the centre than at the nostrils.
i‴. Rictal bristles well developed.
i^4. Nostrils long, protected by an overhanging membrane .... CURSONIA, p. 248.
j^4. Nostrils oval and exposed ...... MALACOCINCLA, [p. 260.
j‴. Rictal bristles obsolete or only feebly developed .... PELLORNEUM, p. 237.
f″. Bill stout, generally curved throughout and deeper at the nostrils than in the middle.
k‴. Outer edges of primaries uniform.
k^4. Nostrils long and overhung by a membrane.
e^5. Small bristles overhanging the nostrils; outer tail-feathers less than 12 mm. shorter than middle pair .... ALCIPPE, p. 275.
f^5. No bristles over nostrils; outer tail-feathers more than 12 mm. shorter than middle pair .... SCHŒNIPARUS, p. 283.

l'''. Outer edges of primaries conspicuously parti-coloured.
l⁴. Nostrils overhung by hairs...... PSEUDOMINLA, p. 286.
m⁴. Nostrils overhung by numerous small hairs; tail strongly graduated.
i⁵. Bill narrow; hind toe and claw equal .... FULVETTA, p. 289.
j⁵. Bill broad; hind claw shorter than hind toe............ LIOPARUS. p. 293.
d. Wings longer, not so rounded and not fitting close to the body.
h'. Wing more than three times length of tarsus .... HORIZILLAS, p. 257.
i'. Wing less than three times length of tarsus.
g''. Tail more than three times length of tarsus........................ ERYTHROCICHLA, [p. 258.
h''. Tail equal to twice length of tarsus.. ÆTHOSTOMA, p. 259.
C. Tail under 45 mm.
e. Bill as long as the head; curved downwards. RIMATOR, p. 255.
f. Bill half as long as the head; straight.... TURDINULUS, p. 250.

Genus DRYONASTES Sharpe, 1883.

The genus *Dryonastes*, of which *D. ruficollis* is the type, contains those Laughing-Thrushes which have the nostrils almost completely hidden by bristles, and in many respects show a similarity to the *Corvidæ*, from which, however, in others they are as widely divided as they are in their habits and nidification.

They are all noisy, gregarious birds, feeding principally on the ground but also on bushes, and they eat both insects, seeds and fruit.

Harington proposed to divide the birds of this genus into two genera on account of the varying degree of density in the plumes and bristles at the base of the bill and by the differences in the shape of the bill itself. To be consistent, however, one would have to make yet further genera, for if *ruficollis* differs in degree from *cærulatus*, so also *galbanus* differs to an equal extent from *ruficollis*. Under the circumstances it would seem wiser to keep them together, and this I do.

Key to Species and Subspecies.

A. Chin and throat black.
a. Ear-coverts black .... *D. ruficollis*, p. 139.
b. Ear-coverts white.
a'. Back chestnut .... *D. nuchalis*, p. 140.
b'. Back olive-brown .... *D. chinensis*, p. 141.
B. Chin and throat white.
c. Tail with no pale tip .... *D. cærulatus cærulatus*, p. 141.
d. Tail with pale tip.
c'. Ear-coverts white .... *D. c. subcærulatus*, p. 142.
d'. Ear-coverts brown .... *D. c. kaurensis*, p. 143.
C. Chin and throat chestnut-brown .. *D. sannio*, p. 144.
D. Chin black, throat yellow .... *D. galbanus*, p. 145.

(120) Dryonastes ruficollis.

THE RUFOUS-NECKED LAUGHING-THRUSH.

Ianthocincla ruficollis Jard. & Selby, Ill. Orn., 2nd series, pl. 21 (Himalayas).
Dryonastes ruficollis. Blanf. & Oates, i, p. 73.

Vernacular names. *Pobduya, Hath Gurri-gurri* (Beng.); *Kapchenpho* (Lepcha); *Doopooleeka* (Assam); *Dao-popalika* (Cachari).

Description. Crown and nape slaty-grey; remainder of head, throat and centre of upper breast black; sides of neck to ear-coverts bright chestnut; upper plumage and wings olive-brown; the outer webs of the primaries ashy; tail black, the base suffused with olive-green; breast, upper abdomen, sides of the body and thighs olive-brown; centre of lower abdomen and under tail-coverts bright chestnut.

Colours of soft parts. Iris bright red; legs, feet and bill black.

Measurements. Total length about 250 mm.; wing 100 to 105 mm.; tail about 115 mm.; tarsus about 35 mm.; culmen about 20 mm.

Distribution. Eastern Nepal, through Assam, North and South of the Brahmaputra, Manipur, Lushai, Tippera and Chittagong Hill tracts, and Bhamo and the Upper Chindwin.

Nidification. The Rufous-necked Laughing-Thrush breeds principally in April and May, but nests may be found containing eggs almost any time from March to August, and I have had them brought to me once in September. The nests are deep, rather untidy structures of grass, leaves, roots and tendrils lined with roots, fern-rachides or coarse fibre. They are cup-shaped and are generally placed in high bushes or small trees in scrub-jungle or the secondary growth in deserted cultivation. The eggs number three or four and are an intensely glossy pale skim-milk blue, pale blue or practically white, the latter being rare. 200 eggs average $25{\cdot}7 \times 20{\cdot}0$ mm. They breed generally below 2,000 feet.

Habits. This Laughing-Thrush is a very gregarious, very noisy bird, haunting the outskirts of villages, scrub- and bamboo-jungle, reeds or long grass. It is very partial to the dense matted growth which at once springs up in deserted cultivation but it is not a forest bird, and when seen in the forest it will be only on the fringe of it. The parties, which may number anything from half-a-dozen to twenty or more, feed both on the ground and in amongst the lower cover, clambering freely about in a very energetic manner and keeping up a continual noisy chatter, which every now and then bursts into a perfect babel of shrieks, laughs and expostulations. They are not shy birds and do not resent observation, though from their habits they may sometimes be difficult to see but in the vicinity of villages the flocks are

very tame and confiding. They keep generally below 2,000 feet and are most common in the low foot-hills and adjoining plains, but they are also found up to 4,000 feet.

(121) Dryonastes nuchalis.

Ogle's Laughing-Thrush.

Garrulax nuchalis Godw.-Aust., A. M. N. H., (4) xviii, p. 411 (1876) (Dibrugarh, Assam).
Dryonastes nuchalis. Blanf. & Oates, i, p. 74.

Vernacular names. *Pak-chi-loka* (Trans-Dikku Nagas).

Description. Forehead, upper portion of cheeks and round the eye black; crown and nape slate-grey: a few pointed white feathers in front of the crown; hind neck and upper back chestnut; remaining upper plumage olive-brown, the outer webs of the quills tinged with paler grey and tips of tail-feathers broadly black; lower parts of cheeks, ear-coverts and sides of neck white; chin and throat black; breast light ashy; remainder of lower plumage olive-brown.

Colours of soft parts. Iris blood-red to brick-red; bill black; legs and feet pale fleshy or fleshy-grey, toes the same or a shade darker.

Measurements. Total length about 135 mm.; wing 106 to 112 mm.; tail about 110 mm.; culmen about 25 mm.

Distribution. Hills South of the Brahmapntra from Naogang to the extreme east of Lakhimpur from the foot-hills up to some 3,000 feet. This Laughing-Thrush probably does not occur in Manipur, certainly not in the Cachar Hills adjoining.

Nidification. Ogle's Laughing-Thrush has so far only been found breeding by Dr. Coltart and later by myself round about Margherita in the extreme east of the Assam Valley. It is a common bird in the higher foot-hills from about 500 feet up to about 3,000 feet during the breeding season, which is from April to June. The nest is like that of the Rufous-necked Laughing-Thrush but bigger and more massive. It is generally placed in scrub-jungle in ravines or broken country. The eggs number two or three and are a rather darker blue than the eggs of the last bird and not so glossy as a rule, though one set of pure white eggs taken by Dr. Coltart are very highly glossed. Forty eggs average about 28·5 × 20·7 mm.

Habits. At present there is nothing recorded about this bird, but from what we saw of it at Margherita it differs little from the rest of the genus. Perhaps not quite so noisy as *ruficollis*, it indulges in much the same games of follow-my-leader through scrub- and bamboo-jungle, each bird every now and then clambering up to the top of a bush and shouting loudly to the others, who in turn emulate both his climbing feats and his cackling laugh,

a chorus from the rest urging each to do his best. They are not very shy, but from their habit of feeding on the ground in thick scrub are more often heard than seen. They appear never to be found in the plains and probably never over about 3,000 feet.

(122) Dryonastes chinensis leucogenys.

THE BLACK-THROATED LAUGHING-THRUSH.

Crateropus leucogenys Blyth, J. A. S. B., xi, p. 180 (1842) (Upper Bengal, *in errore*).
Dryonastes chinensis. Blanf. & Oates, i, p. 74.

Vernacular names. None recorded.

Description. Crown and nape slaty-blue, the anterior portion of the crown streaked with white; cheeks and ear-coverts white; remainder of head to upper breast black; upper plumage and exposed parts of the wings rich olive-brown, outer webs of first primaries silvery-grey; tail olive-brown, the terminal quarter black; breast, sides of neck and upper abdomen ashy-grey; remainder of lower surface olive-brown.

Colours of soft parts. Iris red; bill black; mouth and eyelids plumbeous; legs fleshy-brown; claws horn-colour.

Measurements. Total length about 280 to 290 mm.; wing 110 to 115 mm.; tail about 115 to 120 mm.; culmen about 22 mm.

Distribution. The Southern Shan States, Tounghoo to the southern half of Pegu, Yunnan, ? South-West China.

Nidification unknown. Harington's eggs are very doubtful.

Habits. Harington says that this is a very common bird at Tounghoo. It has a series of fine notes which can hardly be called a song as well as many of the harsher notes of the genus. In general its habits are much those of the rest of the family. It is a favourite cage-bird in China.

The bird from S.W. China is probably Robinson and Kloss's new subspecies *germaini*.

I designate the type locality of *leucogenys* as Meetan, Pegu.

(123) Dryonastes cærulatus cærulatus.

THE GREY-SIDED LAUGHING-THRUSH.

Cinclosoma cærulatus Hodgs., As. Res., xix, p. 147 (1836) (Nepal).
Dryonastes cærulatus. Blanf. & Oates, i, p. 75.

Vernacular names. *Tarma-pho* (Lepcha); *Piang-kam* (Bhut.).

Description. Forehead, the upper part of the cheeks and round the eye black; ear-coverts black above, whitish tipped with rufous below; upper plumage and sides of neck rufous-brown, brighter on the greater coverts, the outer webs of the quills and on the head, the feathers of which have narrow edges of black; rump

tinged with ashy; tail chestnut-brown; lower parts of cheeks rufous-brown; extreme point of chin black; remainder of chin, throat, the middle of the breast and abdomen and under tail-coverts white; sides of breast and abdomen ashy.

Colours of soft parts. Iris red or red-brown; bill horny-black, paler and greyer at the base; legs pale fleshy. "Orbital skin livid" (*Jerdon*).

Measurements. Length about 280 mm.; wing 103 to 108 mm.; tail about 120 mm.; tarsus about 35 mm.; culmen about 20 mm.

Distribution. Nepal, Sikkim, hills North of the Brahmaputra and hill-ranges of North Manipur, Naga Hills to Dibrugarh.

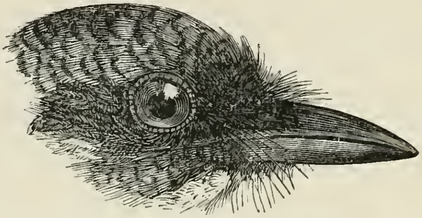


Fig. 27.—Head of *D. c. cærulatus.*

Nidification. Breeds in Sikkim in May and June and occasionally as early as April at between 6,000 and 8,000 feet, making a bulky, cup-shaped nest of twigs, bamboo leaves, grass, roots and stems of plants, lined with finer roots and fern-rachides and placed in small trees or high bushes at any height between 5 and 15 feet. The eggs, two or three in number, are pale blue-green, very like those of *Garrulax moniliger*, but the texture is smoother and closer though not nearly so hard or glossy as those of the *ruficollis* group. Fifteen eggs average 30·5 × 22·1 mm.

Habits. Similar to those of the rest of the genus. This bird, however, is one of high altitudes, being found principally between 3,000 and 5,000 feet, and ascending up to 6,000 feet in summer and descending to about 2,000 in winter.

(124) Dryonastes cærulatus subcærulatus.

THE SHILLONG LAUGHING-THRUSH.

Garrulax subcærulatus Hume, S. F., vii, p. 140 (1878) (Shillong).
Dryonastes subcærulatus. Blanf. & Oates, i, p. 76.

Vernacular names. None recorded.

Description. Similar to the last, but has the ear-coverts and cheeks above and below them white, just tipped here and there with black; the three outermost pairs of tail-feathers are broadly tipped with white and the upper parts are rather paler.

Colours of soft parts and Measurements as in *D. c. cærulatus.*

Distribution. Khasia Hills only.

Nidification. The Shillong Laughing-Thrush breeds in May and June in the pine-forests between 4,000 and 6,000 feet. The nest is like that of the last bird, but seldom has bamboo leaves in the materials of which it is composed and, on the other hand, often has pine needles. It is generally placed in a high, thin bush in one of the numerous bush- and fern-covered nullahs or ravines running through the pine-forests but it may also be found in tangles of raspberry or blackberry vines within a couple of feet of the ground. The eggs number two or three, very rarely four, and are like those of *cærulatus*, perhaps a little more highly polished, yet never like the eggs of the Rufous-necked Laughing-Thrush. Forty eggs average 29·3 × 20·8 mm., but vary very greatly in size.

Habits. This is not so noisy a bird as most others of the genus *Dryonastes*, but it has the same habit of wandering about in flocks of half-a-dozen to a dozen in undergrowth and scrub-jungle, all the while keeping up constant conversation which now and then breaks out into violent abuse or argument. Many of its notes are very full, soft and pleasant, but others are equally harsh and discordant. It feeds much on the ground or in low bushes, but I have seen it working at some height on the rhododendron trees near the Shillong Peak. It never seems to descend below 3,000 feet and is found up to 6,200 feet on the highest peaks.

(125) Dryonastes cærulatus kaurensis.

The Kachin Hills Laughing-Thrush.

Dryonastes kaurensis Rippon, Bull. B. O. C., xii, p. 13 (1901) (Bhamo).

Vernacular names. *Wo-krang-krang-frong* (Kachin).

Description. Differs from *D. c. subcærulatus* in having rufescent-brown ear-coverts.

Colours of soft parts. "Orbital skin and naked patch round the eye slaty-blue" (*Harington*).

Measurements. Total length about 287 mm.; culmen 26·6 mm.; wing 104·6 mm.; tail 115·3 mm.; tarsus 40·6 mm. (*Rippon*).

Distribution. North and Central Kachin Hills.

Nidification. Harington and Grant found it breeding in the Bhamo district in April, May and June. The nest, which is generally composed of bamboo leaves and lined with roots, was placed either in clumps of hill-bamboo or in high bushes. The eggs, two in number, are like those of *cærulatus* but perhaps rather darker. Ten eggs average 30·5 × 21·5 mm.

Habits. This Laughing-Thrush is found between 5,000 and 7,000 feet in the Bhamo Hills; it is said to have a "very fine, almost human whistle which can easily be imitated and by which it can be called up. It generally keeps to very dense forest."

(126) Dryonastes sannio.

THE WHITE-BROWED LAUGHING-THRUSH.

Garrulax sannio Swinh., Ibis, 1867, p. 403 (China).
Dryonastes sannio. Blanf. & Oates, i, p. 76.

Vernacular names. *Shong-shay*, *Wo-frow* (Kachin).

Description. Lores, cheeks, lower part of the ear-coverts and a supercilium to the nape yellowish white; remainder of head, neck, chin and throat chestnut-brown; upper plumage and exposed parts of wings olive-brown; tail rufous-brown; centre of breast and abdomen pale ochraceous; sides of same rufous olive-brown; under tail-coverts bright ochraceous.

Colours of soft parts. Legs and feet pale brown with a faint purplish-fleshy tinge; claws darker; bill blackish: orbital skin pale fleshy-grey; iris dull brownish maroon, liver-brown, or light brown (*Hume*).

Measurements. Length about 250 to 260 mm.; wing 95 to 99 mm.; tail about 100 to 105 mm.; tarsus about 35 mm.; culmen about 18 to 19 mm.

Distribution. The extreme east of Cachar Hills, Manipur, Chin and Kachin Hills, Shan States into S.W. China, Fohkien (*La Touche*).

Nidification. The breeding season commences in February, but most eggs are laid in April and May and from then onwards to the middle of June. The nest is like that of *ruficollis* but with more grass in its construction, and is generally placed low down in brambles, bushes or thick grass, but in the Shan States it appears to select small trees and saplings for nesting purposes. The eggs vary from two to four in number and in colour from pure white to pale blue. They have the extremely hard, glossy texture of the eggs of the Rufous-necked Laughing-Thrush, from which they cannot be distinguished. Eighty eggs average 26·0 × 19·6 mm.

Habits. A very rare bird in Cachar and Manipur, this Laughing-Thrush becomes extremely common in the Kachin and Chin Hills between 3,000 and 5,500 feet. In its habits it is the same noisy, gregarious bird as is *ruficollis*, and, though a skulker in low jungle, is not shy or intolerant of observation. According to Harington they collect together in the evenings and are then often very noisy, but their notes are more complaining and less hilarious than those of the White-crested Laughing-Thrushes.

(127) Dryonastes galbanus.

Austen's Laughing-Thrush.

Garrulax galbanus Godw.-Aust., P. Z. S., 1874, p. 44 (Manipur).
Dryonastes galbanus. Blanf. & Oates, i, p. 68.

Vernacular names. None recorded.

Description. A narrow ashy-white supercilium; crown and nape ashy-brown; rest of head and chin black; upper plumage, wing-coverts and outer webs of secondaries ochraceous brown; the outer webs of primaries ashy-olive; inner webs of all quills brown; tail greenish-ashy, the four middle feathers broadly tipped with black and sub-tipped whitish, the others broadly tipped with white preceded by blackish; lower plumage yellow washed with olive on the sides; under tail-coverts white.

Colours of soft parts. Bill black; legs ash-grey; iris red-brown (*Godw.-Austen*).

Measurements. Length about 240 to 250 mm.; wing 92 to 96 mm.; tail about 105 to 110 mm.; tarsus about 35 mm.; culmen about 20 to 22 mm.

Distribution. Manipur and Chin Hills.

Nidification. In all respects like that of the last bird. Thirty eggs average 24·3 × 18·5 mm. and cannot be distinguished from those of that Laughing-Thrush, except that they are a trifle smaller and perhaps rather less glossy.

Habits. Similar to those of *ruficollis*, but found principally between 2,500 and 5,000 feet. It is said also to be more of a forest bird in the Chin Hills and less restricted to scrub and bush-jungle, though Hume found it frequenting grass-lands in very large flocks, 50 to 80 in number, in Manipur.

Genus GARRULAX Lesson, 1831.

The genus *Garrulax* differs from *Dryonastes* in having fewer bristles and hairs covering the nostrils, which are clearly visible. The feathers of the head are in most species long and ample, and in some are developed into long crests.

At first sight the White-headed Laughing-Thrushes appear to be divided from the rest of the genus by their fine crests and by the fact that they lay eggs of a totally different character to those of the other genera. Now, however, that Mr. J. Stewart has taken many nests of *G. delesserti* in Travancore, it is found that this bird, though in other respects like the species which lay blue eggs, lays round white eggs, exact miniatures of those of *G. leucolophus.* All the species within Indian limits lay unspotted eggs, either blue or white.

Key to Species and Subspecies.

A. Crown and crest white.	
a. Upper breast white, distinctly defined from rufous of lower breast and abdomen	*G. l. leucolophus*, p. 146.
b. Breast white, merging into rufous of abdomen	*G. l. belangeri*, p. 148.
c. Breast and entire abdomen white......	*G. l. diardi*, p. 148.
B. Crest not present, crown not white.	
d. A well-marked black pectoral band.	
a'. A black cheek-stripe.	
a''. Tips to tail white..............	*G. p. pectoralis*, p. 150.
b''. Tips to tail buff	*G. p. semitorquata*, p. 151.
b'. No black cheek-stripe.	
c''. Tips to tail white	*G. m. moniliger*, p. 151.
d''. Tips to tail buff	*G. m. fuscata*, p. 152.
e. No pectoral band.	
c'. Chin and throat yellow	*G. gularis*, p. 152.
d'. Chin and throat white.	
e''. Tail entirely black	*G. delesserti*, p. 149.
f''. Tail tipped with white.	
a'''. Darker	*G. a. albogularis*, p. 153.
b'''. Paler......................	*G. a. whistleri*, p. 154.
e'. Chin and throat chocolate-brown ..	*G. strepitans*, p. 154.

(128) Garrulax leucolophus leucolophus.

THE HIMALAYAN WHITE-CRESTED LAUGHING-THRUSH.

Corvus leucolophus Hardw., Trans. Linn. Soc., xi, p. 208 (1815) (Mt. above Hardwar).
Garrulax leucolophus. Blanf. & Oates, i, p. 77.

Vernacular names. *Rawil-Kahy* (Hindi in N.W.P.); *Karrio-pho* (Lepcha); *Karria-goka* (Bhutan); *Naga-dhaopooleka* (Assam); *Dao-flantu* (Cachari).

Description. Lores, ear-coverts and round the eye black; the rest of the head to nape and to lower breast pure white, the longest feathers of the crest dark ashy-grey; a ferruginous collar below upper breast merging into the olive-brown of the rest of upper and lower plumage; wings brown, the outer webs of the feathers like the back; tail brown washed with olive-brown; flanks, lower breast and abdomen like the back, but with a tinge of rufous throughout.

Colours of soft parts. Iris red or red-brown; bill horny-black to black; legs and feet slate to fleshy-grey, the soles paler and claws darker; orbital skin dull slate.

Measurements. Length about 300 mm.; wing 132 to 137 mm.; tail about 130 to 135 mm.; tarsus about 45 mm.; culmen about 28 to 30 mm.

Distribution. Himalayas from Simla to North Chin Hills, Kachin Hills and North and Central Burma.

Nidification. As with so many of the common birds, the breeding season of this Laughing-Thrush is very extended, eggs being laid from the end of March to the beginning of August, the latter being second broods. They breed from practically the level of the plains up to 5,000 feet, but between 1,000 and 2,500 feet is the favourite altitude. The nests are broad, but shallow, cups, rather loosely put together and are generally composed for the main part of grass and bamboo leaves, bound together with stems of plants, tendrils, roots and fern-rachides and mixed more or less with dead leaves, dried moss, etc. The lining is of coarse roots, fern-rachides and tendrils. They may be placed in almost any position from low down in scrub and brambles to 20 feet up in small saplings, but a common site is some thorny, and not too dense, bush in light undergrowth.

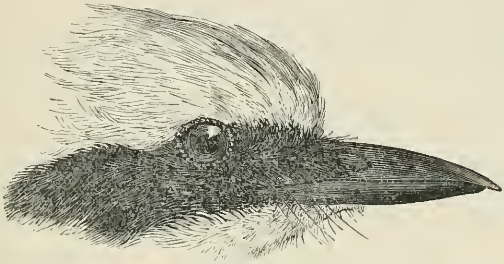


Fig. 28.—Head of *G. l. leucolophus*.

The eggs number from three to five, two or six only very rarely. They are a pure china-white in colour, hard and glossy with numerous pits, a feature shown in no other egg of this family. In shape they are very spherical, and but for their stoutness and the pits might easily be mistaken for Kingfishers' eggs. 200 eggs average 28·1 × 22·8 mm., and the extremes in length and breadth are **30·0** × 23·4 mm., 28·7 × **24·1** mm. and **25·0** × **21·0** mm.

Habits. The White-crested Laughing-Thrush is extremely abundant in the lower hills in the North and South of the Brahmaputra. It is one of the noisiest of birds, always calling to one another in notes of varying degrees of harshness, the big flocks in which it congregates every few minutes indulging in an outburst of cackling and laughing calls in which each member tries to out-shout the rest. These outbursts are often accompanied by dancing and flapping of wings as the birds clamber about the undergrowth or work along the ground underneath. They are not shy birds, and if one keeps quiet they show far more interest in each other and in their food than they do in the intruder. Moreover, they are most inquisitive birds and must investigate carefully everything they cannot understand. They may be found in flocks even in the breeding season, and a bird seated on her

L 2

nest has been heard joining in the chorus of a number engaged in the cackling and clambering round about her.

(129) Garrulax leucolophus belangeri.

THE BURMESE WHITE-CRESTED LAUGHING-THRUSH.

Garrulax belangeri Less., Traité d'Orn., p. 648 (1831); Blanf. & Oates, i, p. 79.

Vernacular names. *Wa-youn-hnet, Way-oung-hnet-goung byu* (Burmese).

Description. Differs from the preceding in having the white of the breast running into the abdomen instead of being sharply defined by the rufous colour. The colour of the upper parts is a light ferruginous- rather than an olive-brown.

Colours of soft parts as in *leucolophus.*

Measurements. A rather smaller bird than the last, with a wing of about 125 to 130 mm.

Distribution. Yunnan, North and South Shan States, Annam, Lower Chin and Kachin Hills, Pegu and Tenasserim.

Nidification. Similar to that of the last bird, twelve eggs averaging 28·3 × 22·7 mm.

Habits differ in no way from those of the last or the next bird.

(130) Garrulax leucolophus diardi.

THE SIAMESE WHITE-CRESTED LAUGHING-THRUSH.

Turdus diardi Less., Traité d'Orn., p. 408 (1831) (Siam).
Garrulax diardi. Blanf. & Oates, i, p. 79.

Vernacular names. None recorded.

Description. Differs from the other two races by the grey of the crest merging into the rufous back instead of contrasting therewith. The whole of the abdomen is white.

Colours of soft parts as in the other races.

Measurements. The largest of the three races with a wing between 135 and 140 mm.

Distribution. Extreme South Yunnan, Siam, Cambodia, Annam, Cochin China, rarely extending into South-East Tenasserim, and then in a somewhat intermediate form approaching *belangeri.* The specimens in the British Museum from the Shan States and Annam labelled "*diardi*" should all be referred to the last race, *belangeri.*

Nidification. Similar to that of the other races. Twelve eggs average 27·4 × 22·4 mm., but a larger series would probably average bigger.

Habits. Like those of the other races but this form appears to be found well into the plains.

(131) Garrulax delesserti.

THE WYNAAD LAUGHING-THRUSH.

Crateropus delesserti Jerd., Madr. Jour. L. S., x, p. 256 (1839) (Wynaad, S. India).
Garrulax delesserti. Blanf. & Oates, i, p. 82.

Vernacular names. *Poong Karuvi* (Tel.).

Description. Lores, ear-coverts and round the eye black; forehead, crown, mantle and sides of neck deep slaty-grey, the forehead mottled with lighter grey; back, rump and visible portions of wing chestnut-brown, except the outer webs of the first few primaries which are duller; upper tail-coverts brighter chestnut; tail black, tinged with rufous at the base; extreme point of chin black; remainder of chin, cheeks and throat white; breast and upper part of abdomen ashy-grey; lower part of abdomen, vent, thighs and under tail-coverts deep chestnut.

Colours of soft parts. Iris crimson; upper mandible blackish brown, lower mandible pale fleshy; legs, feet and claws fleshy-white.

Measurements. Total length about 250 to 260 mm.; wing 100 to 105 mm.; tail 98 to 102 mm.; tarsus about 38 mm.; culmen about 24 mm.

Distribution. The hills of S. India from the Wynaad to the south of Travancore.

Nidification. Mr. J. Stewart describes the nest as varying greatly in character. In some it is a rather bulky, deep cup, almost semi-domed, in others it is a cup hardly bigger than that of *Molpastes*. It is composed of grass, leaves, weed stems, etc. lined with roots and placed either in a bush or in a tangle of creepers and briars. The breeding season is March to May, but Mr. Stewart has taken eggs in February and again in August, the latter possibly a second laying.

The eggs are generally two or three in number, very rarely four. They are in appearance a link between those of the *G. leucolophus* group and those of the other Laughing-Thrushes. Pure white and very round in shape like the eggs of the former they are a little less hard-shelled and have no pits; on the other hand, they are harder shelled and different in texture to the eggs of the latter. 50 eggs average 27·5 × 20·5 mm.

The birds appear to breed at all heights up to 4,000 feet, but principally between 1,500 and 2,500 feet.

Habits. Apparently found from the level of the plains up to the highest hills, haunting thick underwood and having the same noisy and gregarious habits as others of the genus.

(132) Garrulax pectoralis pectoralis.

THE INDIAN BLACK-GORGETED LAUGHING-THRUSH.

Ianthocincla pectoralis Gould, P.Z.S., 1835, p. 186 (Nepal).
Garrulax pectoralis. Blanf. & Oates, i, p. 80.

Vernacular names. *Ol-pho* (Lepcha); *Bura Penga* (Bengali).

Description. Forehead to tail and wing-coverts fulvous olive-brown; a broad collar on the hind neck brighter fulvous; tail like the back, the outer feathers broadly tipped with white and with subterminal bands of black; the middle tail-feathers uni-coloured and the next two pairs with black bands only; primary-coverts black edged with hoary; exposed parts of quills olive-brown, the earlier primaries edged with hoary; lores and a narrow supercilium white; ear-coverts black and white or almost entirely white or entirely black; a cheek-stripe from the gape, continued round the ear-coverts to the upper part of the eye, and a broad pectoral band, black; chin and throat whitish; the remainder of the under parts fulvous, albescent on the abdomen.

Colours of soft parts. Upper mandible dark horn-colour; the lower bluish-horn at the base and tip, dark brown in the middle; mouth bluish; iris yellow, orange-yellow or orange-brown; eyelids and orbital skin dusky blue, edges of the eyelids orange-yellow; legs light to dark slaty-grey, claws pale horn.

Measurements. Total length about 330 to 340 mm.; wing 142 to 150 mm.: tail about 130 mm.; tarsus about 49 mm.; culmen about 30 mm.

Distribution. Nepal to E. Assam, North and South of the Brahmaputra, N. Burma and N. Shan States.

Nidification. Breeds from the end of March to early June, many birds having second broods in July and August. The nests are large, loosely-built cups of leaves, bamboo leaves, grass, roots and stems of weeds, sometimes with moss added, and lined with finer roots, tendrils and fern stems. They may be placed in any thick bush, sapling or clump of bamboos, sometimes quite close to the ground, at other times 20 feet from it. The eggs are generally four in number, sometimes three and rarely five. In colour they are a rather deep blue-green, but quite pale ones are not uncommon; rather long in shape, the texture is smooth and there is very little gloss. 200 eggs average 31·4 × 22·7 mm. The extremes of size are **33·8** × 22·7; 29·2 × **24·1**; **28·7** × 21·6 and 30·2 × **20·9** mm.

Habits. This Laughing-Thrush is a bird of low elevations; it is common in the plains near the hills and breeds principally below 2,500 though it may be found up to 4,500 feet. It is very gregarious, and may often be seen associating with other Laughing-Thrushes, especially with the Necklaced Laughing-Thrush. They are not shy, but from their habit of keeping much to dense

undergrowth they are less often seen than heard, for they are as noisy as the rest of their family. They indulge in the same dances during the early part of the season and not infrequently at other times also, hopping about the ground, flirting and spreading their wings, bowing and performing like circus contortionists, all the time loudly applauding their own performances.

(133) Garrulax pectoralis semitorquata.

The Burmese Black-gorgeted Laughing-Thrush.

Garrulax semitorquata Ogilvie-Grant, Bull. B. O. C., x, p. 49 (1900) (Five-finger Mt., Hainan).

Vernacular names. None recorded.

Description. Differs from the last bird in having the tips to the tail-feathers buff instead of white and the pectoral band frequently interrupted in the centre.

Colours of soft parts and **Measurements** as in the last bird.

Distribution. S. Burma, S. Shan States, Yunnan, Siam and Hainan.

Nidification and **Habits** as in *pectoralis pectoralis.* 50 eggs average 30·7 × 22·0 mm.

(134) Garrulax moniliger moniliger.

The Indian Necklaced Laughing-Thrush.

Cinclosoma moniligera Hodgs., As. Res., xix, p. 147 (1836) (Nepal).
Garrulax moniliger. Blanf. & Oates, i, p. 81.

Vernacular names. *Ol-pho* (Lepcha); *Piang-kam* (Bhut.); *Poreri* or *Purirhi* (Daphla); *Chota penga* (Bengali).

Description. Differs from *pectoralis* in wanting the black cheek-stripe and in having the primary-coverts the same as the others, not black. The ear-coverts are black and white, varying much individually.

Colours of soft parts. Iris pale yellow to bright yellow; eyelids dull purple; bill dark horn-colour, the tip and edges paler; legs light plumbeous, claws pale horn-colour. In young birds the eyes are greenish yellow or a pale washed-out blue.

Measurements. Length about 300 to 310 mm.; wing 123 to 128 mm.; tail about 120 to 125 mm.; tarsus about 43 mm.; culmen about 28 mm.

Distribution. Practically the same as that of *G. pectoralis pectoralis.*

Nidification. This Laughing-Thrush has breeding habits, season, elevation, etc., all identical with its larger cousin, *pectoralis*; the nests are indistinguishable, but the eggs can be told by their smaller size. 200 eggs average about 28·4 × 21·3 mm., but the largest of

these exceed in size the smallest of those of the Black-gorgeted Laughing-Thrush.

The extremes are maxima, **30·3** × 21·0 and 27·9 × **23·5** mm.; minima **27·0** × 21·6 and 27·2 × **19·8** mm.

Habits exactly the same as those of *pectoralis*, with which it frequently consorts.

(135) Garrulax moniliger fuscata.

The Burmese Necklaced Laughing-Thrush.

Garrulax moniliger fuscata Stuart Baker, Bull. B. O. C., xxxvii, p. 64 (1918) (Tavoy).

Vernacular names. None recorded.

Description. Differs from *G. m. moniliger* in having the tips to the tail-feathers buff instead of white and in, *generally*, having more white and less black on the ear-coverts.

Colours of soft parts and **Measurements** as in the last, but South Burmese birds are rather smaller.

Distribution. South Central Burma and Siam to the south of Tenasserim.

Nidification and **Habits** differ in no way from those of the last bird. 60 eggs average 27·8 × 21·3 mm.

(136) Garrulax gularis.

McClelland's Laughing-Thrush.

Ianthocincla gularis McClell., P. Z. S., 1839, p. 150 (Cachar).
Garrulax gularis. Blanf. & Oates, i, p. 81.

Vernacular names. *Dao-ria phang* (Cachari).

Description. Lores, ear-coverts and under the eyes black; forehead, crown, nape, mantle and sides of the neck slaty-grey; back, rump and visible portions of the wing deep chestnut-brown, except the outer webs of the first primaries, which are duller; upper tail-coverts deeper chestnut; the four central tail-feathers rufous-brown on the basal two-thirds of their length, then black; the others all pale chestnut, the fourth pair from the outside partially black on the inner web; extreme point of chin black; remainder of chin, cheeks, throat, fore neck, centre of breast and abdomen yellow; sides of breast and upper abdomen dark ashy-grey; lower part of flanks, thighs, vent and under tail-coverts deep chestnut.

Colours of soft parts. Bill black; irides crimson or bright red.

Measurements. Length about 250 mm; wing about 95 to 100 mm.; tail about the same; tarsus about 38 mm.; culmen about 28 mm.

Distribution. The hills South of the Brahmaputra, from Cachar to Lakhimpur and the Dafla Hills.

Nidification. McClelland's Laughing-Thrush is resident and breeds throughout its range, the great majority of eggs being laid

in May but others also in late April and throughout June. The nest is a typical Laughing-Thrush's nest, a large, shallow and rather untidy cup, but more tendrils are used in its construction than I have noticed in the nests of others of the genus. It is generally built in dense forest, and may be placed in bushes or in saplings between 3 and 20 feet from the ground. The eggs are two or three in number, rather long ovals, more smooth and glossy than the eggs of most of its genus, but less so than those of *Dryonastes ruficollis* etc. They vary in colour from pure white to pale blue-green, and 100 eggs average 29·2 × 20·5 mm. The extremes in measurement are 31·0 × 19·8 ; 29·0 × 21·7 ; 25·5 × 19·6 and 27·8 19·2 mm.

Habits. This is a Laughing-Thrush of rather high elevations, seldom under 3,500 and hardly ever below 2,000 feet, even in winter, though a straggler was obtained at Lakhimpur in Cachar, practically in the plains. It is a less noisy, less gregarious bird than many of its nearest relations and keeps much to dense forest rather than to scrub. It has a loud, rather sweet whistle in addition to the usual cackling notes of its kind.

(137) Garrulax albogularis albogularis.

The White-throated Laughing-Thrush.

Ianthocincla albogularis Gould, P. Z. S., 1835, p. 187 (Nepal).
Garrulax albigularis. Blanf. & Oates, i, p. 82.

Vernacular names. *Karriam-pho* (Lepcha).

Description. Forehead fulvous; lores and feathers above and below eye black; cheeks, chin and throat white; upper plumage rich olive-brown, tinged with fulvous on the crown and ear-coverts and rusty on the upper tail-coverts; wings brown, edged with the colour of the back; tail olive-brown, the four outer pairs of feathers very broadly tipped with white; sides of neck and a broad pectoral band olive-brown; remainder of lower plumage bright ferruginous.

Colours of soft parts. Bill black or dull black, inside of mouth yellow; legs, feet and claws pale fleshy plumbeous to darker livid plumbeous; iris greyish blue.

Measurements. Length about 300 to 310 mm.; wing 123 to 133 mm., average 128 mm.; tail 140 to 145 mm.; tarsus about 43 mm.; culmen about 25 mm.

Distribution. Nepal and Sikkim, but not in Bhutan or Assam, except twice in the Barail Range in N. Cachar.

Nidification. The only nest recorded is one taken by myself in N. Cachar. Neither nest nor eggs differ in any way from those of the next and better known form.

Habits. Similar to those of the next bird.

(138) Garrulax albogularis whistleri.

THE WESTERN WHITE-THROATED LAUGHING-THRUSH.

Garrulax albogularis whistleri Stuart Baker, Bull. B. O. C., xlii, p. 29 (1921) (Simla).

Vernacular names. None recorded.

Description. Differs from true *albogularis* in having the upper parts paler, more grey and less red, in having the red of the under parts paler and duller, and in being distinctly bigger.

Colours of soft parts as in the last bird.

Measurements. Wing 132 (very abraded) to 144, average 139 mm.; other measurements in proportion.

Distribution. Himalayas from the Hazara country to Garhwal.

Nidification. Breeds at all ranges between 4,000 and 9,000 feet in May and June, making a cup-shaped nest of grass, leaves, roots, tendrils, etc., rather loosely put together and generally bound with reed stems. Sometimes there is no lining, at other times it is well lined with moss and fern roots. They are usually built in small, fairly thick bushes in dense forest, less often in small trees and rarely in scrub or secondary growth. The eggs number three, seldom two and even more seldom four, and are of a beautiful glossy dark blue, darker than that of any other egg except *Hodgsonius phœnicuroides.* In shape they are fairly long ovals, and the average of 50 eggs is 29·0 × 21·1 mm.

Habits. These birds are as gregarious and almost as noisy as the White-crested Laughing-Thrushes, remaining in flocks even during the breeding season. They are birds of high elevations and do not seem to wander down much below 3,000 feet, though they may be found a little lower in winter. They keep much to forest, feeding on the ground and on low undergrowth. Though from their habits difficult to watch, they are not shy birds.

(139) Garrulax strepitans.

TICKELL'S LAUGHING-THRUSH.

Garrulax strepitans Blyth, J. A. S. B., xxiv, p. 268 (1858) (Mt. Muleyit, Tenasserim); Blanf. & Oates, i, p. 83.

Vernacular names. None recorded.

Description. Forehead, crown and nape reddish brown; face black; hinder portion of ear-coverts ferruginous; a spot on either side of the neck white; hind neck, sides of neck and upper back ashy, paler and whiter in front, darker behind, and blending with the olive-brown of the upper plumage and wings; tail blackish, marked with olive-brown on the outer webs; throat and breast chocolate-brown, the latter bordered by ashy blending with the olive-brown of the remainder of the plumage.

Colours of soft parts. Iris red, lake-red or crimson; legs and feet very dark brown to almost black, claws horny-brown; bill black.

Measurements. Length about 300 to 310 mm.; wing 132 to 135 mm.; tail about 135 mm.; tarsus about 45 to 47 mm.; culmen about 27 mm.

Distribution. Tenasserim and North and South-West Siam, where specimens have been obtained at Koon Tan and Si-sa-wad.

Nidification unknown.

Habits. Davison says that it is a noisy but shy bird, avoiding observation. "Not by any means uncommon, occurring in small flocks of twenty or more, and keeping entirely, so far as I have observed, to the forest, especially to the ravines where this is densest."

Genus **IANTHOCINCLA** Gould, 1835.

Oates applied the generic term *Ianthocincla* to those Laughing-Thrushes which have no bristles at the base of the forehead, but in which the nostrils are overhung by a few long hairs. The genus differs in no other respect from *Garrulax*, and the division is perhaps hardly necessary, but it is convenient for students and may therefore be retained. All the species are remarkable for having the secondaries tipped with white and the bill is rather narrow.

Key to Species and Subspecies.

A. Crown and nape black.	
a. Upper plumage spotted with white....	*I. ocellata ocellata*, p. 155.
b. Upper plumage barred with black.	[p. 158.
a'. Ear-coverts black	*I. rufogularis rufogularis*,
b'. Ear-coverts rusty-orange	*I. r. occidentalis*, p. 159.
c'. Ear-coverts brown................	*I. r. assamensis*, p. 159.
c. Upper plumage neither barred nor	[p. 156.
spotted	*I. cineracea cineracea*,
B. Crown and nape ashy	*I. c. styani*, p. 157.
C. Crown and nape reddish brown with pale shafts.	
d. Lower plumage rufous-brown with white bars	*I. austeni austeni*, p. 160.
e. Lower plumage much paler, each feather with broad white edges	*I. a. victoriæ*, p. 161.

(140) Ianthocincla ocellata ocellata.

THE WHITE-SPOTTED LAUGHING-THRUSH.

Cinclosoma ocellatum Vigors, P. Z. S., 1831, p. 15 (Himalayas).
Ianthocincla ocellata. Blanf. & Oates, i, p. 84.

Vernacular names. *Lho-karreum-pho* (Lepcha).

Description. Forehead, crown and nape brownish black: face

and supercilia bright fulvous; ear-coverts chestnut; upper back and sides of neck fulvous, the feathers with broad black subterminal marks and fulvous tips; scapulars and wing-coverts to tail reddish brown with white spots preceded by black marks; quills tipped white, the earlier primaries black on the outer webs, becoming progressively ashy and then chestnut; middle tail-feathers chestnut, tipped with white; the others rufous at base, then ashy and finally black with white tips; centre of throat black, the feathers with narrow rufous edges; sides of throat rufous barred with black; below fulvous buff, the breast barred with black and the flanks more olivaceous with a few paler fulvous bars.

Colours of soft parts. Bill yellowish, dusky above and on tip; legs dull yellow; iris yellow-brown.

Measurements. Length about 310 to 320 mm.; wing 130 to 135 mm.; tail about 180 mm.; tarsus about 48 mm.; culmen about 30 to 32 mm.

Distribution. Nepal, Sikkim and Bhutan, from which latter place I have received typical specimens. *The type-locality may be restricted to Darjeeling.*

Nidification. Hume received a nest from Sikkim with one of the parent birds. "The nest is principally composed of these" (fern and grass) "intermingled with moss and roots and is a large, loose structure some 7 inches in diameter." It was placed close to the ground in a thick clump of fern and grass, and contained two eggs which are not described.

Habits. This Laughing-Thrush is a bird of high elevations. It occurs about Darjeeling from some 6,000 or 7,000 feet up to at least 10,000 feet. It keeps much to heavy forest, and appears to be less gregarious and not so noisy as the species of the two preceding genera.

(141) Ianthocincla cineracea cineracea.

THE ASHY LAUGHING-THRUSH.

Trochalopterum cineraceum Godw.-Aust., P. Z. S., 1874, p. 15 (Naga Hills).
Ianthocincla cineracea. Blanf. & Oates, i, p. 85.

Vernacular names. *Lehu* (Angami Naga).

Description. Forehead, crown and nape black; lores, a broad supercilium, ear-coverts and under the eye dull white, a narrow line over the ear-coverts and a broad moustachial streak black, the latter ending in streaks on the sides of the upper neck; upper plumage and wing-coverts olivaceous-ashy, tinged with rufous on the upper tail-coverts; secondaries and the tail like the back, each feather with a subterminal black band and a white tip; primaries ashy on the outer web; primary-coverts black; winglet ashy on the outer webs, dusky on the inner; chin and throat pale fulvous, with the shafts black; whole remaining lower plumage fulvous, tinged with olive on the flanks and albescent on the abdomen.

Colours of soft parts. Iris pale buffish yellow to orange-yellow; lids pale lavender, edged dusky; bill horny-brown, tipped paler and with whole lower mandible pale horny-yellow; legs and feet pale dull fleshy.

Measurements. Total length 225 to 235 mm.; wing 86 to 89 mm.; tail about 100 mm.; tarsus about 32 mm.; culmen about 20 mm.

Distribution. Naga Hills, Khasia and N. Cachar Hills, Manipur, Lushai and Chin Hills. Does not apparently extend eastwards to Lakhimpur.

Nidification. Numerous nests were taken by Col. Tytler in the Naga Hills in May and June and by Messrs. Mackenzie, Hopwood and others in the Chin Hills in March and April. They are composed of ferns, leaves, roots and grass, lined with finer roots and often bound round with tendrils and stems of plants; they are rather more compact than most nests of this group and are placed in bushes or small saplings in forest. The eggs are generally two only in number, sometimes three; the texture is very fine and close and the surface smooth and silky to the touch, not hard and glossy as in *D. ruficollis.* In colour they are pure unspotted blue-green. 150 eggs average 25·3 × 18·6 mm.

Habits. This is not a very gregarious bird, and though it may sometimes be found in small family parties, it more often wanders about in pairs, scratching on the ground amongst the fallen rubbish for insects or clambering through the undergrowth and bracken. It constantly utters conversational notes, some sweet and some harsh, but never breaks out into a paroxysm of sound like some of the other Laughing-Thrushes do. It haunts elevations of 6,000 feet upwards and is rare below 5,000 feet.

(142) Ianthocincla cineracea styani.

STYAN'S LAUGHING-THRUSH.

Trochalopterum styani Oustalet, Bull. Mus. Par., 6, p. 226 (1898) (Ta-tsien-lu).

Vernacular names. None recorded.

Description. This race differs from the preceding in having the head dark ashy instead of black and the ear-coverts rufous instead of black and white. The upper plumage is browner and the breast is tinged with vinous.

Colours of soft parts as in *I. c. cineracea.*

Measurements. Wing 94 to 98 mm.; tail 106 to 118 mm.; tarsus about 38 mm.; culmen 22 to 25 mm.

Distribution. Yunnan and the E. Shan States.

Nidification. A single egg from the Styan collection measures 28·1 × 19·8 mm.

Habits. Not recorded.

(143) Ianthocincla rufogularis rufogularis.

THE RUFOUS-CHINNED LAUGHING-THRUSH.

Ianthocincla rufogularis Gould, P. Z. S., 1835, p. 48 (Himalayas, Sikkim); Blanf. & Oates, i, p. 86.

Vernacular names. *Narbigivan-pho* (Lepcha).

Description. Lores pure white; a large ring of grey round the eye; ear-coverts wholly black or tinged with rufous posteriorly; forehead and crown black; cheeks and a large patch under the eye and ear-coverts mingled black and white; a broad supercilium reaching to the nape, the sides of the neck and the whole upper plumage olive-green, tinged with fulvous and each feather of the hind neck, back and upper rump tipped with a lunate black bar; wing-coverts olive-brown, the larger series broadly tipped with black; primary-coverts dark brown margined with black; winglet ashy, tipped black; earlier primaries hoary on the outer webs, the others with a black patch, increasing in extent whilst the basal portions change to olivaceous; outer secondaries with the outer webs olive-brown, broadly tipped with black and with a sub-tip white line; inner secondaries olive-brown on both webs and tipped with black and white; tail rufescent, with deep rufous tips and black subterminal bands; point of chin rufous, throat white; under tail-coverts deep chestnut; remaining lower plumage ashy-brown, albescent on the abdomen and each feather, except on the last, spotted with black.

Colours of soft parts. Iris brown or red-brown; bill pale yellow-horny, darker at tip; legs dull fleshy-brown; eyelids and orbital skin bluish.

Measurements. Length about 225 to 235 mm.; wing about 94 to 97 mm.; tail about 120 mm.; tarsus about 34 mm.; culmen about 24 mm.

The young have the crown olive-brown, tipped with black; the whole chin white, and the black bars and spots above and below smaller.

Distribution. Nepal, Sikkim, Bhutan and the hills North of the Brahmaputra at least as far East as the Miri Hills North of Lakhimpur.

Nidification. This bird breeds very commonly in Sikkim and round about Darjeeling in May, June and July, making a nest of small twigs, many tendrils, a few roots and sometimes a leaf or two, lined with fine roots. In some cases nothing but tendrils are used for the outer part of the nest. It is placed as a rule in a high bush or small tree, less often in a low bush. The eggs number two to four, generally three, and are pure white, not highly glossed, though very smooth and very fragile for their size. In shape they are long ovals and fifteen eggs average 26·2 × 19·4 mm.

A second brood is sometimes brought up as late as September.

Habits. The Rufous-chinned Laughing-Thrush is found in pairs or in small parties of four and five and, like the rest of its relatives, haunts undergrowth, scrub and secondary growth, but always in forest or in its immediate vicinity. It is not a noisy bird, but has a large variety of notes, some of which are harsh and loud and some are soft and mellow; its flight, when it can be forced to take to wing, is feeble and ill-sustained, but in clambering about bushes and reeds it is very active and equally so on the ground, where it seeks much of its food, both insect and seed. It is found as low as 2,500 feet, but is most common between 4,000 and 6,000 feet, ascending as high as 8,000 feet.

(144) Ianthocincla rufogularis assamensis.

Hartert's Laughing-Thrush.

Ianthocincla rufogularis assamensis Hartert, Vög. Pal., i, p. 635 (1910) (Margherita, Assam).

Vernacular names. *Mi-pa-pita* (Trans-Diku Nagas).

Description. Differs from typical *rufogularis* in having the whole chin and throat rufous and the ear-coverts almost all, or nearly all, rufous.

Colours of soft parts as in *rufogularis.*

Measurements. A rather smaller bird than *rufogularis* with wing about 91 to 94 mm.

Distribution. The whole of Assam south of the Brahmaputra as far South as the Lushai and Chittagong Hills and as far East as Lakhimpur and thence into the Chin Hills.

Nidification. Breeds from 3,500 feet upwards throughout its habitat in May and June, with an occasional second laying in August and September. The site selected is almost invariably a bush in heavy forest, though the part selected is always near an opening of some kind, river, road or a natural open glade. Nest and eggs like those of the preceding birds. 40 eggs average 26·5 × 18·9 mm.

Habits. Similar to those of *rufogularis.*

(145) Ianthocincla rufogularis occidentalis.

The Kashmir Laughing-Thrush.

Ianthocincla rufogularis occidentalis Hartert, Vög. Pal. i, p. 635 (1910) (Dehra Doon).

Vernacular names. None recorded.

Description. Similar to the Rufous-chinned Laughing-Thrush, but has the ear-coverts rusty-orange and the upper parts pale, more olive and less rufous.

Colours of soft parts and Measurements the same as in the last.

Distribution. From Kumaon westwards through Kashmir and the N.W. Himalayas.

Nidification. Breeds in Garhwal and the Simla Hills in May and June between 6,000 and 8,000 feet elevation. Nest and eggs are like those of the Sikkim bird, but the former are made more of twigs, and tendrils are not so invariably or plentifully used. Six eggs average 26·3 × 18·7 mm.

Habits. Like those of the other subspecies. Hutton found in the stomach of a bird he examined "sand, seeds and the remains of wasps."

(146) Ianthocincla austeni austeni.

The Cachar Laughing-Thrush.

Trochalopteron austeni Godw.-Aust., J. A. S. B., xxxix, ii, p. 105 (1870) (Hengdang Peak, N. Cachar Hills).
Ianthocincla austeni. Blanf. & Oates, i, p. 87.

Vernacular names. *Dao-gajao-i-ba* (Cachari).

Description. Forehead, crown, nape, hind neck and sides, and the whole neck reddish brown with pale streaks; rump paler, without pale shafts; upper tail-coverts and middle pair of tail-feathers rufous; other feathers black with white tips and with the bases suffused with rufous on the outer webs; wing-coverts and inner secondaries reddish brown, the latter and the longer coverts tipped with white and with subterminal dusky marks; outer webs of the earlier primaries grey, those of the other quills reddish brown; lores dusky; ear-coverts dark rufous-brown with pale shafts; chin, throat and breast rufous-brown, indistinctly barred with dusky and whitish; remainder of lower plumage rufous-brown, with broad and distinct white bars preceded by a dusky line; under tail-coverts narrowly tipped with white.

Colours of soft parts. Iris brown or lake-brown; bill dark horny, blackish at the tip, paler on lower mandible; legs dull fleshy- or livid-brown.

Measurements. Total length about 250 mm.; wing 100 to 105 mm.; tail about 120 mm.; tarsus about 35 mm.; culmen 20 mm.

Distribution. Khasia, Cachar and Naga Hills. Hengdang Peak is on the watershed between the Cachar Hills and Manipur, and doubtless it will be found also in the higher hills of the latter state.

Nidification. This rare Laughing-Thrush breeds throughout its range between 4,000 and 8,000 feet, principally about 6,000 feet, but it is not very uncommon on the higher hills about Cherrapunji in the breeding season at little over 4,000 feet. It breeds in the end of April and May, and possibly sometimes has a second laying as I have a nest taken in August with fresh eggs. The nest is

like that of *I. rufogularis*, but seems to be generally placed in a low bush, or a tangle of canes or raspberry bushes quite close to the ground. The eggs, two or three in number, are pure white, fragile, with a very slight gloss, and 48 average about 26·3 × 19·0 mm.

Habits. I found the bird in the Khasia and Cachar Hills in rhododendron and stunted oak forest, going about in pairs or small family parties in the dense undergrowth. They were just as loath to take to wing as other members of this subfamily, and when forced to do so fluttered and sailed alternately to the next bit of cover, into which they tumbled headlong rather than settled. They kept up a continuous chatter, but were not particularly noisy. Those examined by me had eaten both insects and seeds, several containing masses of a small red ant, a most vicious biter.

(147) Ianthocincla austeni victoriæ.

THE CHIN HILLS LAUGHING-THRUSH.

Ianthocincla victoriæ Rippon, Bull. B. O. C., xvi, p. 47 (1906) (Mt. Victoria).

Vernacular names. None recorded.

Description. Differs from the Cachar bird in being more olive and less red above and in having the lower parts much paler and whiter, each feather being edged with white.

Colours of soft parts as in the last.

Measurements. Total length 244 mm.; wing 94 mm. (*Rippon*).

Distribution. South Chin Hills.

Nidification unknown.

Habits. A bird of high elevations, only found between 7,000 and 10,000 feet.

Genus TROCHALOPTERUM Hodgson, 1843.

The genus *Trochalopterum* differs from the preceding genera in having the base of the bill quite devoid of all bristles and hairs, the nostrils and their membranes being free and exposed. In other respects it is quite typical of the subfamily.

The bill varies a good deal in length and stoutness, and the nostrils in some are oval and exposed, whilst in others they are long and narrow and partly covered by a membrane. Oates and Harington point out that those birds with short, stout bills lay unspotted eggs, whilst those with slender bills and long linear nostrils lay spotted eggs. This is true, but, on the other hand, birds of the group of Laughing-Thrushes with the curious wing-speculum, probably an older feature than bill and nostril, all lay

spotted eggs with the one exception of *T. squamatum*, which lays them plain blue. Even the shape of the bills and nostrils, however, varies only in degree, more or less intergrading with one another.

If Harington and Oates, and before them Gray, thought it desirable to split up the genus, we have Hartert on the contrary lumping under the one name (*Ianthocincla*), Oates's genera *Ianthocincla*, *Babax* and *Trochalopterum*. It must be remembered, however, that in the Palæarctic region Hartert has to deal with only 29 species and subspecies, whereas in the Oriental region the number is much greater, no less than 40 species and subspecies being found in India in this genus alone.

Oates's genera, as given in the first edition of the 'Avifauna,' seem reasonable and are easy for the student to understand, and I retain them in the present edition.

In the first edition, however, many geographical races were quite wrongly given the status of full species, and these are now relegated to their proper position. A few new species and subspecies have been added to our list, and we have recognized in this genus 12 species and 17 subspecies.

Key to Species.

A. Chestnut on crown or nape, or both	*T. erythrocephalum*, [p. 162.
B. No chestnut on crown or nape.	
a. Wings brightly coloured.	
a'. Wings chiefly crimson.	
a''. Tail black	*T. phœniceum*, p. 168.
b''. Tail crimson	*T. milnei*, p. 170.
b'. Wings chiefly bright yellow.	
c''. Primary-coverts brown	*T. subunicolor*, p. 171.
d''. Primary-coverts black.	
a'''. Tail without white tips	*T. affine*, p. 172.
b'''. Tail with white tips	*T. variegatum variegatum*, p. 173.
c'. Wings chiefly slaty-blue	*T. variegatum simile*, [p. 174.
d'. Wings with patch of bright blue	*T. squamatum*, p. 174.
b. Wings dull coloured with no bright patch.	
e'. Upper plumage not striped.	
e''. Breast rufous....................	*T. cachinnans*, p. 176.
f''. Breast whitish, streaked ashy......	*T. jerdoni*, p. 177.
g''. Breast olive grey-brown	*T. henrici*, p. 183.
f'. Upper plumage striped.	
h''. With a white supercilium	*T. virgatum*, p. 179.
i''. With no white supercilium	*T. lineatum*, p. 180.

Trochalopterum erythrocephalum.

This species is a very widely extended one, ranging from the Western Himalayas to the south of Tenasserim. As might be expected, its geographical variations are great, and it is therefore divided into 8 subspecies.

Key to Subspecies.

A. Back and breast with large black *round* spots.	
a. No conspicuous grey supercilium.	
a'. Ear-coverts chestnut, tipped black and white	*T. e. erythrocephalum,* [p. 163.
b'. Ear-coverts black, edged pinkish white	*T. e. nigrimentum,* p. 164.
c'. Ear-coverts chestnut like the crown .	*T. e. erythrolæma,* p. 164.
b. A conspicuous grey supercilium.	
d'. Ear-coverts chestnut	*T. e. godwini,* p. 165.
e'. Ear-coverts grey with black shaft-stripes	*T. e. woodi,* p. 166.
B. Back and breast with brown *oval* spots . .	*T. e. chrysopterum,* p. 166.
C. No spots on back or breast.	
c. Chin and throat only rufous	*T. e. melanostigma,* p. 167.
d. Chin, throat and breast rufous	*T. e. ramsayi,* p. 168.

(148) Trochalopterum erythrocephalum erythrocephalum.

THE RED-HEADED LAUGHING-THRUSH.

Cinclosoma erythrocephalum Vigors, P. Z. S., 1831, p. 171 (Himalayas, Chamba).

Trochalopterum erythrocephalum. Blanf. & Oates, i, p. 89.

Vernacular names. None recorded.

Description. Forehead, crown and nape chestnut; ear-coverts chestnut, each feather blackish near the tip and edged with white; lores, chin and upper throat black, with a chocolate tinge; cheeks mingled chestnut and black; mantle and sides of neck olive-brown, each feather with a semicircular black mark near the end, lower back plain olive-brown; rump and upper tail-coverts slaty-grey; tail ashy, suffused with golden yellow on the outer webs; wing-coverts olive-brown, the greater broadly tipped with deep ferruginous; primary-coverts and winglet yellow on the outer webs, ashy on the inner; outer webs of primaries and outer secondaries bright golden yellow; inner secondaries and tips of outer ashy-blue; the base of the outer webs of the outer secondaries golden red; lower plumage pale fulvous, washed with olivaceous on the sides of the body and under tail-coverts, each feather of the throat and breast with a narrow crescentic black bar near the end and tipped with fulvous white.

Colours of soft parts. Iris grey-brown or yellow-brown; bill black; legs and feet pale yellowish- or fleshy-brown or light brown.

Measurements. Length about 280 mm.; wing 102 to 105 mm.; tail about 120 to 125 mm.; tarsus 37 to 38 mm.; culmen about 20 to 22 mm.

Distribution. The Himalayas from Chamba to Nepal.

Nidification. This Laughing-Thrush breeds in May and June at heights from 4,000 to 7,000 feet or more, making the usual cup-

shaped nests of leaves, bracken, ferns and grass with a thin lining of roots and fine grass. Outwardly the nests measure about 6 inches in diameter by 3 inches in depth, and are placed low down in thick bushes or tangled undergrowth in forests. The eggs, two or three in number, are pale bright Thrush-egg blue-green in colour, dotted and blotched sparsely at the larger end with dark brownish red. In shape they are rather long ovals and in texture smooth and fine with but little gloss. Fourteen eggs average 29·2 × 21·3 mm.

Habits. This bird, and indeed most of this genus, is much less noisy than those of the genus *Garrulax*, and though sometimes found in small flocks, is not so invariably gregarious, often wandering about in pairs. They keep up a continuous conversational chatter, interrupted with louder calls, some of which are quite mellow and sweet. They feed almost entirely on the ground itself or in the lower undergrowth in forests, and take to wing only when forced to do so. They are both insectivorous and eat small seeds.

(149) Trochalopterum erythrocephalum erythrolæma.

HUME'S RED-HEADED LAUGHING-THRUSH.

Trochalopterum erythrolæma Hume, S. F., x, p. 153 (1881) (Matchi, S. Manipur); Blanf. & Oates, i, p. 90.
Trochalopterum holerythrops Rippon, Bull. B. O. C., xiv, p. 83 (1904) (Chin Hills).

Vernacular names. None recorded.

Description. Differs from the last in having the lores and point of chin dusky brown; the chin and throat chestnut like the crown; the breast chestnut and the centre of the abdomen ferruginous. The forehead is tinged with grey.

Colours of soft parts as in the last bird.

Measurements. Length about 250 to 260 mm.; wing about 91 to 95 mm.; tail about 110 to 115 mm.; culmen 19 to 21 mm.; tarsus 27 mm.

Distribution. East Manipur and Chin Hills.

Nidification. The nest and eggs cannot be distinguished from those of the last bird. Twenty-two eggs average 29·9 × 20·5 mm.

(150) Trochalopterum erythrocephalum nigrimentum.

THE SIKKIM RED-HEADED LAUGHING-THRUSH.

Trochalopterum nigrimentum Oates, Blanf. & Oates, Avifauna B. I., i, p. 91 (1889) (Nepal) (ex Hodgson MS.).

Vernacular names. *Tarphom-pho* (Lepcha); *Paniong* (Bhutea).

Description. Similar to *T. erythrocephalum*, but the forehead is rufous with black shafts and the anterior portion of the crown deep grey, each feather black in the centre; the ear-coverts are

black with pinkish-white edges and the lores, cheeks, chin and upper throat are black. The upper tail-coverts are olive-green.

Colours of soft parts. Bill dark horny-brown or blackish brown; legs dark fleshy or yellowish brown; iris grey-brown; "red" (*Jerdon*).

Measurements. Total length about 260 to 270 mm.; wing 100 to 105 mm.; tail 112 to 115 mm.; tarsus about 38 mm.; culmen about 21 to 22 mm.

Distribution. Eastern Nepal to the Daphla and Mikir Hills in Assam.

Nidification. Breeds throughout its range in the months of April, May and early June at elevations of 5,500 feet upwards. The nest is a massive deep cup made of leaves, grass and a large proportion of moss, bound together with tendrils and roots. The lining generally consists of fine roots with an inner lining of

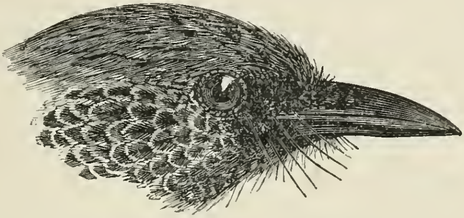


Fig. 29.—Head of *T. e. nigrimentum.*

matted dead leaves, but this latter is not always present. Most nests are placed in thick bushes, but others may be found on small saplings, and the site selected is either the fringe of forest and heavy jungle or scrub-jungle and secondary growth. The eggs number two or three and are like those of the rest of the genus, but are generally very sparsely marked. Seventeen eggs average about 28·7 × 21·1 mm.

Habits. This is a bird of high elevations from 5,000 up to 9,000 feet or more. It has the usual habits of the genus and is quite common in the woods round about Darjeeling, where in the early morning and evening it may often be surprised on the roads and jungle paths, hunting in small parties for insects in the cattle droppings, but scuttling off promptly into cover when disturbed.

(151) Trochalopterum erythrocephalum godwini.

GODWIN-AUSTEN'S RED-HEADED LAUGHING-THRUSH.

Trochalopterum erythrocephalum godwini Harington, Bull. B. O. C., xxxiii, p. 92 (1914) (Hengdan, N. Cachar Hills).

Vernacular names. *Dao-qua-lok* (Cachari).

Description. Similar to *T. e. erythrolæma*, but has a conspicuous grey supercilium and the forehead also much greyer.

Colours of soft parts and **Measurements** as in *erythrolæma.*

Distribution. The high ranges between Cachar, the Naga Hills and N.W. Manipur.

Nidification and **Habits.** Nothing recorded.

(152) Trochalopterum erythrocephalum woodi.

WOOD'S RED-HEADED LAUGHING-THRUSH.

Trochalopterum erythrocephalum woodi Stuart Baker, Bull. B. O. C., xxxv, p. 17 (1914) (Loi-Sing, N. Shan States).

Vernacular names. None recorded.

Description. Differs from *T. e. godwini* in having the upper back unmarked with black as in *melanostigma.* The chin and throat are blackish instead of rufous and the ear-coverts are grey. From *erythrolæma* it differs in having grey ear-coverts and a broad grey supercilium. From *chrysopterum* it differs in having black not rufous-brown edges to the breast-feathers, and the upper parts are rufous-brown rather than olive-green.

Colours of soft parts. Bill dark horny-brown; legs apparently dark fleshy-brown.

Measurements. "Wing 107 mm.; tail 122 mm.; culmen 20 mm.; tarsus 37 mm." (*Harington*).

Distribution. Shan States.

Nidification and **Habits** not recorded.

(153) Trochalopterum erythrocephalum chrysopterum.

THE SHILLONG YELLOW-WINGED LAUGHING-THRUSH.

Ianthocincla chrysoptera Gould, P. Z. S., 1835, p. 48 (Khasia Hills).
Trochalopterum chrysopterum. Blanf. & Oates, i, p. 90.

Vernacular names. None recorded.

Description. Differs from all the other races in having brown oval spots instead of black round spots on back and breast. It has a broad grey supercilium and the ear-coverts are rufous more or less tinged with grey. The chin and throat are dark chestnut.

Colours of soft parts. Iris yellowish or greyish brown, sometimes quite grey; legs fleshy or yellowish brown; bill dark horny-brown.

Measurements. Total length about 260 to 270 mm.; wing 101 to 106 mm.; tail about 110 to 115 mm.; culmen about 20 to 21 mm.; tarsus about 38 mm.

Distribution. Khasia Hills only.

Nidification. The breeding season of this subspecies commences in the end of April and ceases in the first week in June, though an odd nest or so, perhaps a second brood, may be found as late as August. The nest is a wide, shallow cup of moss, roots, grasses and dead leaves, bound together with roots, tendrils and stems of reeds and is lined with roots, fern-rachides or, rarely, fine grass. It is a fairly well-built nest, and often looks much like that of some of the true Thrushes. No attempt seems to be made at concealment, and it is usually placed in some tall, thinly foliaged bush, about 6 feet from the ground, in pine- or evergreen-forest.

The eggs are generally two only in number, sometimes three and very rarely four. In type of coloration they are like those of *erythrocephalum*, but are more boldly marked with a few black or deep purply-red blotches, spots or lines. In a few eggs these markings are very scanty, but in some are more numerous than in the eggs of other races of this Laughing-Thrush. The average of 50 eggs is 30·6 × 21·6 mm.

Habits. Those of the genus. A bird of the pine-forests from 4,000 feet upwards.

(154) Trochalopterum erythrocephalum melanostigma.

BLYTH'S RED-HEADED LAUGHING-THRUSH.

Garrulax melanostigma Blyth, J. A. S. B., xxiv, p. 268 (1855) (Mt. Muleyit).
Trochalopterum melanostigma. Blanf. & Oates, i, p. 92.

Vernacular names. None recorded.

Description. Forehead, lores and cheeks black, the black of the lores extending to over the eye and merging in a short grey supercilium; ear-coverts and sides of the neck silvery-grey streaked with black; throat and upper breast ferruginous, paling on lower breast and abdomen and becoming olive-grey on flanks and under tail-coverts. No spots on either back or breast.

Colours of soft parts. Legs, feet and claws very pale brown to reddish; bill black; iris brown or hazel-brown (*Hume & Davis.*).

Distribution. Muleyit Mount, Tenasserim, and thence northwards into the Shan States.

Nidification. Nests and eggs taken by Mr. C. Hopwood resemble those of *T. e. chrysopterum*, his eggs measure 30·5 × 20·4 mm.

Habits. According to Davison these birds keep in parties of six or eight, feeding chiefly on the ground and keeping much in the brush-wood. They are neither very noisy nor very silent, uttering from time to time a fine whistling call in addition to other numerous conversational notes. They appear to feed exclusively on insects.

(155) Trochalopterum erythrocephalum ramsayi.

THE KARENNI RED-HEADED LAUGHING-THRUSH.

Trochalopterum ramsayi Ogilvie-Grant, Bull. B. O. C., xiv, p. 19 (1904) (Karennee).

Vernacular names. None recorded.

Description. Differs from the last bird in having the chestnut of the chin and throat continued over the entire breast and belly.

Colours of soft parts. "Iris deep chocolate; bill black; legs pinkish brown."

Measurements. Total length about 254 mm.; wing 101 to 104 mm.; tail about 114 mm.; tarsus about 40 mm.; culmen about 20 mm.

Distribution. Karenni, extending to the pine-forests in the Salween District.

Nidification and Habits. Nothing recorded.

Trochalopterum phœniceum

Key to Subspecies.

A. Tail broadly tipped with orange.
  a. General plumage darker .... *T. p. phœniceum*, p. 168.
  b. General plumage paler................. *T. p. bakeri*, p. 169.
B. Tail narrowly edged with ochraceous .... *T. p. ripponi*, p. 170.

(156) Trochalopterum phœniceum phœniceum.

THE ASSAM CRIMSON-WINGED LAUGHING-THRUSH.

Ianthocincla phœnicea Gould, Icon. Av., pl. 3 (1837) (Nepal).
Trochalopterum phœniceum. Blanf. & Oates, i, p. 93.

Vernacular names. *Tilji-pho* (Lepcha); *Repcha* (Bhut.).

Description. Lores, cheeks, ear-coverts, round the eye and a patch on the side of the neck crimson; a short supercilium black; upper plumage olive-brown, the feathers of the crown with partially concealed black margins; tail black, broadly tipped with orange and outermost feathers washed with orange throughout; wing-coverts olive-brown; primary-coverts dusky edged with olive-brown; winglet suffused with crimson on the outer webs and outermost coverts edged with the same; outer webs of primaries edged with crimson and yellow, the former increasing and latter decreasing in extent inwards; secondaries with centre of outer webs edged blue, the terminal portions suffused with crimson, the bases with olive-green; the whole lower plumage fulvous olive-brown, tinged with ashy on the abdomen; under tail-coverts black, broadly tipped with crimson.

Colours of soft parts. Legs and feet brown with a purplish tinge; bill horny dark brown to practically black; iris brown (juv.) to deep crimson or lac-red; orbital skin dull leaden-dusky.

Measurements. Total length about 230 mm.; wing 81 to 93 mm.; tail about 100 mm.; tarsus about 32 mm.; culmen about 18 mm.

Distribution. Nepal to the extreme east of Assam, North of the Brahmaputra.

Nidification. Breeds between 3,000 and 5,000 feet and sometimes rather higher in the months of April to June, making a compact, deep cup of grass, leaves, roots and moss, lined with the latter and measuring about $4\frac{1}{2}$ inches to $5\frac{1}{2}$ inches in diameter by nearly as much in depth. It is generally placed in bushes in rather dense and moist forest, sometimes fairly high up but more often at 3 or 4 feet from the ground. The eggs number 2 or 3, very rarely 4, and are very beautiful, the ground-colour being a deep Thrush-egg blue with dark maroon and red-black lines, blotches and dots, the first being most numerous. Fifty eggs average $25{\cdot}9 \times 18{\cdot}5$ mm.

Habits. This species haunts forests and secondary growth rather than scrub-jungle, at elevations between 3,000 and 6,000 feet, wandering as low down as 2,000 feet in winter. They are sometimes found singly or in pairs, but more often in small parties of four or five, keeping much to the undergrowth and lower trees and also hopping about and feeding on the ground, eating insects of all kinds and also certain seeds. Their flight is feeble and their notes consist of a great variety of conversational calls both harsh and sweet, with an occasional louder call when the birds get separated.

(157) Trochalopterum phœniceum bakeri.

THE ASSAM CRIMSON-WINGED LAUGHING-THRUSH.

Trochalopteron phœniceum bakeri Hartert, Bull. B. O. C., xxxiii, p. 10 (1909) (Laisung, N. Cachar).

Vernacular names. *Dao-yao-gajao* (Cachari).

Description. Differs from the preceding bird in being paler both above and below and in having the ashy-grey wash on the abdomen much more pronounced.

Colours of soft parts as in the last bird.

Measurements slightly smaller than the last, the wing averaging about 85 mm. as against 90 mm. in that bird.

Distribution. Hills South of the Brahmaputra, Manipur and Lushai Hills.

Nidification. Breeds in May and June between 3,500 and 5,000 feet. The nest is a well-made cup, similar to that of the last bird but more often placed quite close to the ground. Eggs

indistinguishable from those of the last; 100 measure on an average 26·1 × 18·5 mm.

Habits. A comparatively common bird between 3,000 and 6,000 feet, nearly always found in cool, moist tree-forest in which there is a fair amount of undergrowth. Voice, food, flight, etc. as *T. p. phœniceum*.

(158) Trochalopterum phœniceum ripponi.

THE BURMESE CRIMSON-WINGED LAUGHING-THRUSH.

Trochalopterum ripponi Oates, Bull. B. O. C., xi, p. 10 (1900) (Kengtung State).

Vernacular names. *Krang-shong-maling* (Kachin).

Description. Similar to the preceding, but has the crimson of the head extending on to the sides of the neck, throat and supercilium. The lower plumage is greyish yellow instead of fulvous or olive-brown and the tail is narrowly tipped with ochre instead of broadly with orange.

Colours of soft parts and **Measurements** as in *T. p. phœniceum*.

Distribution. Kachin Hills, N. Shan States.

Nidification. The few eggs I have seen of this race seem to be rather darker than those of the other races. Twenty-one average about 25·8 × 18·6 mm.

Habits as in the other races, but according to Harington they frequent bamboo-jungle as well as forest, placing their nest sometimes in clumps of bamboo. They keep generally above 5,000 feet and are found at least up to 7,000 feet.

(159) Trochalopterum milnei sharpei.

THE BURMESE RED-TAILED LAUGHING-THRUSH.

Trochalopterum sharpei Rippon, Bull. B. O. C., xii, p. 13 (1901) (Kengtung State).

Vernacular names. *Krang-sheng-kabr* (Kachin).

Description. Crown and upper parts of head and neck buffy-rufous; ear-coverts pale grey; throat and lores black; back and wing-coverts olive, each feather of the back with dark edge; rump and upper tail-coverts golden olive; below ashy-olive, more green towards the neck; tail above bright red, below blackish; wing-quills above brilliant and glossy red, the inner webs of the innermost secondaries pure white.

Colours of soft parts. "Bill and feet black; iris brown" (*David & Oust.*).

Measurements. Length about 280 mm.; wing about 106 mm.; tail about 120 mm.; tarsus about 38 mm.; culmen about 30 mm.

Distribution. Kachin Hills and N. Shan States.

Nidification. Breeds in the Kachin Hills in April and May, making a typical Laughing-Thrush's nest of bamboo leaves and grass, mixed with a few roots and other leaves and lined with the former. They are, as usual, cup-shaped, and are placed either in bushes or low down against trees in the dense undergrowth of ravines in forest growing in valleys over 6,000 feet elevation. The eggs are unlike any others of this family and have a pure white ground sparingly spotted and blotched with reddish-brown or nearly black spots; they are in fact exactly like Golden Orioles' eggs. Fifteen eggs average 28·7 × 20·7 mm.

Habits. This very handsome *Trochalopterum* is only found at heights from 5,000 to 8,000 feet, frequenting the most dense of undergrowth, in which it skulks about in small parties or pairs, being heard much more often than seen; at the same time, according to Harington, they are as inquisitive as noisy, and if one remains hidden, the birds soon show themselves in the attempt to make out the intruder.

(160) Trochalopterum subunicolor subunicolor.

The Plain-coloured Laughing-Thrush.

Trochalopterum subunicolor (Hodgs.), Blyth, J. A. S. B., xii, p. 952 (1843) (Nepal); Blanf. & Oates, i, p. 94.

Vernacular names. *Tarmal-pho* (Lepcha); *Nabom* (Bhut.).

Description. Forehead, crown and nape dark ashy-brown, the forehead tinged with fulvous; sides of neck and whole upper plumage olive-brown, each feather margined with brown; middle tail-feathers olive-brown, the others black suffused with olive-yellow on the outer webs and tipped with white; wing-coverts olive-brown; primary-coverts dark brown; visible winglet ashy-yellow; primaries brown with the outer webs grey; outer secondaries with an increasing amount of yellow; inner secondaries olive-brown tinged with yellow and tipped with white; cheeks, chin and throat like the back, but darker and with a few white tips to the feathers of the face; under plumage olive-brown, tinged with fulvous on the abdomen and all the feathers margined with black, except on under tail-coverts and thighs.

Colours of soft parts. Bill dusky; legs reddish brown; iris red-brown (*Jerdon*); iris yellowish grey (*Blanf.*).

Measurements. Length about 230 mm.; wing 90 to 95 mm.; tail about 100 to 105 mm.; tarsus about 35 mm.; culmen about 18 mm.

Distribution. Nepal, Sikkim, Bhutan and hills North of the Brahmaputra as far as the Dibang.

Nidification. According to Hodgson this Laughing-Thrush breeds in Nepal in the months of April, May and June, making a cup-shaped nest of grass and moss lined with bamboo leaves, which it builds in bushes and trees, close to the ground, in open

forests and groves. It lays three or four spotless blue eggs which measure about 26·1 × 17·7 mm.

Habits. This is a bird of very high elevations, being found as high as 11,000 and not below 6,000 feet.

(161) Trochalopterum affine affine.

THE BLACK-FACED LAUGHING-THRUSH.

Garrulax affinis (Hodgs.), Blyth, J. A. S. B., xii, p. 950 (1843) (Nepal).
Trochalopterum affine. Blanf. & Oates, i, p. 94.

Vernacular names. None recorded.

Description. Forehead, crown and nape dark brown tinged with rufous, paler on the forehead; lores and sides of head black: cheeks and a large patch behind the ear-coverts white, extending to, and becoming pale rufous on, the sides of the neck; hind neck rufous-brown blending with the darker brown of the head; back and scapulars rufous-brown, each rather broadly terminated with pale grey; rump olive-brown; upper tail-coverts ferruginous; tail slaty-blue, three-quarters of the central feathers and the outer webs of the others overlaid with bright golden yellow; wing-coverts rufous; primary-coverts black; winglet and inner secondaries slaty-blue; outer webs of outer secondaries and primaries bright golden yellow, slaty-blue at tips and bases; chin black, throat rufous-brown; breast paler and each feather edged with grey; remainder of lower plumage rufous-brown.

Colours of soft parts. Bill black; feet reddish brown; iris from olive-grey (*Blanf.*) to brown (*Jerdon*).

Measurements. Length about 250 to 260 mm.; wing 102 to 115 mm.; tail about 125 mm.; culmen about 21 to 22 mm.; tarsus about 40 mm.

Distribution. Eastern Nepal to Bhutan.

Nidification. Osmaston took nests in May and June in Sikkim at altitudes between 9,000 and 10,000 feet. "The nests were rather massive but neat cups, about 8 inches in external diameter and were composed of moss, thin twigs and dried grass stems, lined copiously with black rhizomorph of a fungus mixed with some birch-bark 'paper'." The nests were placed in rhododendron and viburnum bushes, 5 to 8 feet from the ground. The eggs generally number two only, but three were in one nest taken by Mr. W. P. Masson. In ground-colour they are Thrush-egg blue with a few spots and blotches of purplish black at the larger end. Twelve eggs average 28·5 × 21·2 mm.

Habits. This is a common bird in Sikkim between 8,000 and 13,000 feet, haunting both rhododendron, fir and mixed forest right up to the snow-line. It is apparently generally found in pairs and not in flocks, but otherwise its habits resemble those of the genus.

Trochalopterum variegatum.

Key to Subspecies.

A. Outer webs of primaries and part of tail yellow .... *T. v. variegatum*, p. 173.
B. Outer webs of primaries and part of tail slaty-blue .... *T. v. simile*, p. 174.

(162) Trochalopterum variegatum variegatum.

THE EASTERN VARIEGATED LAUGHING-THRUSH.

Cinclosoma variegatum Vigors, P. Z. S., 1831, p. 56 (Himalayas, E. Nepal).
Trochalopterum variegatum. Blanf. & Oates, i, p. 95.

Vernacular names. *Ganza* (Nepalese).

Description. Forehead fulvous; crown and nape ashy-brown; feathers of eyelid and a spot behind the eye white; lores and a line over and below the eye to the ear-coverts black; ear-coverts white with a black patch; chin and upper throat black; cheeks fulvous, meeting round the black throat; sides of neck and whole upper plumage olive-brown; wing-coverts the same, the greater broadly edged with rufous; winglet and primary-coverts black; the inner webs of the inner secondaries black, the outer grey tipped with white; outer webs of other quills bright golden-yellow tinged with rufous and tipped with white; a large black patch on the outer secondaries; the middle four pairs of tail-feathers black on three parts of their length, then ashy-yellow and tipped with white, the other feathers ashy-yellow on the inner webs, olive-yellow on the outer and tipped white; breast and sides of the body fulvescent ashy-brown; remainder of lower plumage bright tawny-buff.

Colours of soft parts. Bill black; legs and feet pale reddish orange-brown; iris pale yellow-green, brown, raw sienna-brown, pale yellowish brown (*Hume*).

Measurements. Length about 280 to 290 mm.; wing 102 to 112 mm.; tail about 130 mm.: tarsus about 38 mm.; culmen about 20 mm.

Distribution. Himalayas from Chamba to Nepal.

Nidification. This Laughing-Thrush breeds from Simla to Nepal in April, May and June at elevations between 4,000 and 8,000 feet. The nest is a bulky cup made principally of grass with a few roots, dead leaves, etc., mingled with it. Sometimes there is no lining, but at other times there are a few roots and grass stems. It is placed in low bushes and small trees at any height above the ground from a few inches to 10 feet. The eggs generally number three, sometimes four and very rarely five. They are a pale, rather dull blue in colour, freckled and spotted with different shades of reddish brown, and are not nearly such

handsome eggs as those of the *erythrocephalum* group. Eight eggs average 28·5 × 20·5 mm.

Habits. Similar to those of other Laughing-Thrushes, but perhaps they are rather more often seen frequenting low trees as well as undergrowth. It is found between 4,000 and 8,000 feet.

(163) Trochalopterum variegatum simile.

THE WESTERN VARIEGATED LAUGHING-THRUSH.

Trochalopteron simile Hume, Ibis, 1871, p. 408 (Far N.W. Gilgit); Blanf. & Oates, i, p. 96.

Vernacular names. None recorded.

Description. Differs from the Eastern form in having the outer webs of the wing-feathers slaty blue and in having the yellow on the tail replaced with the same slaty-blue.

Colours of soft parts. Legs and feet flesh-colour; bill black; iris brown (*Dr. G. Henderson*).

Measurements as in the last bird.

Distribution. The Western portion of Kashmir and the Hazara country. Very common in the galis round about Murree and Naini-Tal, extends up the Gilgit Valley above Gilgit and up to the frontier of Afghanistan.

Nidification. Breeds very commonly from Murree south-westwards, being found up to some 10,000 feet and down to 5,000 feet. The nest is a big cup with very thick walls composed of grass, leaves, fine twigs and roots, lined with the latter, and measuring anything from 5 to 9 inches in diameter by 5 or 6 deep. The internal cup is about 4 by $2\frac{1}{2}$ inches deep. It is usually placed well up in a fir, deodar or other tree, sometimes as high as 25 feet and seldom low down in bushes. The eggs number three or four, rarely five, and are like those of the last bird, but generally more blotched or spotted and less freckled. Fifty eggs average 27·8 × 21·0 mm.

The breeding season is from the beginning of May to the end of June.

Habits. This Laughing-Thrush, like the last, is much more of a tree bird than most others of the genus, and will be found quite as often hunting for insects well up in the trees as low down in the undergrowth and bushes. It is found up to at least 10,000 feet, and possibly higher, and in winter descends to about 4,000 feet.

(164) Trochalopterum squamatum.

THE BLUE-WINGED LAUGHING-THRUSH.

Ianthocincla squamata Gould, P. Z. S., 1835, p. 48 (Himalayas, Sikkim).
Trochalopterum squamatum. Blanf. & Oates, i, p. 96.

Vernacular names. *Tarmal-pho* (Lepcha); *Nabom* (Bhut.); *Wo-krang-krang-mut* (Kachin).

Description. A black streak over the eye from lores to nape; lores grey or fulvous-brown; sides of head olivaceous or rufous; upper tail-coverts chestnut, remaining upper plumage rufescent olive-brown, each feather with a terminal lunate black tip; in birds which have the lores and sides of the head olivaceous the crown is ashy; wing-coverts chestnut, dusky internally; primary-coverts dusky edged with black; outer web of outer primaries pale blue, inner primaries black; secondaries chestnut at the base; remainder of wing black, the later quills minutely tipped white; lower plumage fulvous, each feather with a terminal black bar; under tail-coverts and thighs castaneous.

Birds with grey crowns have the tail deep black, the others have it bronze-colour with a chestnut tip.

The variations in colour seem due to neither sex nor age. I have found all in both sexes and in pairs breeding together, and they appear to form one of those curious dimorphic colorations, the necessity for the evolution of which naturalists have not yet been able to detect.

Colours of soft parts. Legs and feet pale flesh to fleshy-brown; bill horny black, paler and greyer at tip and on base of lower mandible; iris pale greenish or bluish white; glaucous-brown or dull brown, these latter probably only in young.

Measurements. Length about 250 to 260 mm.; wing 93 to 99 mm.; tail about 100 mm.; tarsus about 37 mm.; culmen about 20 mm.

Distribution. The Himalayas from Nepal to the Kachin Hills; hill-ranges North of the Brahmaputra to N. Arrakan, and Chin Hills and Shan States.

Nidification. The bird breeds at all heights between 3,000 and 6,000 feet and in Nepal (*vide* Hodgson) as low as 2,000. The nest is the usual bulky cup in shape, fairly compact, and made principally of dead leaves intermixed with roots, tendrils and grass, and lined with roots. It is always placed low down in some thick bush or tangle of creepers, often within a foot or two of the ground. The eggs, two or three in number, are s otless blue-green, the texture very smooth and fine but soft and ᵖalmost glossless. Fifty eggs average 29·4 × 20·7 mm.

Habits. The Blue-winged Laughing-Thrush is a bird of humid forests at a comparatively low level. In the hills South of the Brahmaputra it is most common between 3,000 and 5,000 feet, and seems to haunt the banks of streams and rivers far more than the other species of this genus do. It goes about both in pairs and in small family parties, and is conversational rather than noisy, many of its notes being very rich and full. Its flight is very weak and ill-sustained, but it is as strong and clever on its feet as the rest of the family.

Trochalopterum cachinnans.

Key to Subspecies.

A. Lores, chin and a line through the eye black .... *T. c. cachinnans*, p. 176.
B. Lores rusty brown; chin dark brown; no line through eye .... *T. c. cinnamomeum*, p. 177.

(165) Trochalopterum cachinnans cachinnans.

THE NILGIRI LAUGHING-THRUSH.

Crateropus cachinnans Jerd., Madr. Jour. x, p. 255, pl. 7 (1839) (Nilgiris).
Trochalopterum cachinnans. Blanf. & Oates, i, p. 97.

Vernacular names. None recorded.

Description. Point of forehead black; sides of the forehead and broad supercilium white; crown and nape slaty-brown, the feathers very narrowly margined with black; the lateral feathers of the forehead and crown black on their inner, white on the outer, webs, forming a black line above the supercilium; lores, chin and a streak behind the eye black; feathers of the eyelid white; ear-coverts pale rufous; sides of the nape ashy at the end of the supercilia, this colour suffusing the whole of the nape; upper plumage, sides of neck, wings and tail olive-brown; throat and breast bright rufous; abdomen a duller rufous; thighs, vent, under tail-coverts and sides of the body rufescent olive-brown; under wing-coverts rufous.

Colours of soft parts. Iris red-brown to crimson; legs, feet and bill black.

Measurements. Length about 225 to 235 mm.: wing 92 to 96 mm.; tail about 100 mm.; tarsus 30 to 32 mm.; culmen about 16 to 18 mm.

Distribution. Nilgiris, from 4,500 feet upwards.

Nidification. Breeds from February to the end of June throughout its range. The nest is made of grass, leaves, moss, small twigs and other miscellaneous bits, and is lined with roots and fibre and frequently with fur, cotton-wool or feathers. In shape it is a very deep cup, rather bulky but compact, and it is placed in an upright fork of some bush or small tree in forest. The eggs are nearly always two in number, sometimes three but never more. In ground-colour they are a pale, rather washed-out blue and are speckled and blotched with reddish or pinkish brown, a few eggs having also one or two darker spots or hair-lines. They average about $25{\cdot}0 \times 18{\cdot}8$ mm.

Habits. This Laughing-Thrush is extremely common all over the Nilgiris above 4,000 feet wherever there is sufficient cover. It is always found in parties, sometimes consisting of a dozen or more birds, and is one of the noisiest of the family, though its

notes are not so discordant as those of *Garrulax leucolophus*, etc. It keeps much to the ground and to dense undergrowth, and though its diet is partly insectivorous, Jerdon remarks that it feeds principally on the imported Peruvian cherry (*Physalis peruviana*). It is said to be a shy bird except in the breeding season, when it sits very close and becomes much bolder.

(166) Trochalopterum cachinnans cinnamomeum.

DAVISON'S LAUGHING-THRUSH.

Trochalopterum cinnamomeum Davison, Ibis, 1886, p. 204; Blanf. & Oates, i, p. 98.

Vernacular names. None recorded.

Description. Differs from the Nilgiri Laughing-Thrush in entirely wanting the black markings of the head and face; the lower parts are deep cinnamon-brown rather than rufous and the crown is hair-brown instead of slaty-brown.

Colours of soft parts not recorded.

Measurements. "Length 203 mm.; wing 89 mm.; tail 94 mm.; tarsus 74 mm.; bill from gape 22·8 mm." (*Davison*).

Distribution. Unknown; probably Pálghát Hills in Southern India.

Nidification and **Habits** unknown.

Trochalopterum jerdoni.

Key to Subspecies.

A. Chin black .... *T. j. jerdoni*, p. 177.
B. Chin grey.
  a. Conspicuous white supercilium extending to nape .... *T. j. fairbanki*, p. 178.
  b. Short supercilium not passing behind eye.. *T. j. meridionale*, p. 178.

(167) Trochalopterum jerdoni jerdoni.

THE BANASORE LAUGHING-THRUSH.

Garrulax jerdoni Blyth, J. A. S. B., xx, p. 522 (1851) (Banasore Peak).
Trochalopterum jerdoni. Blanf. & Oates, i, p. 99.

Vernacular names. None recorded.

Description. Point of forehead black; crown and nape slaty-brown, the feathers edged darker; a broad white supercilium, with a narrow black line above; lores and a line through the eye black; ear-coverts greyish white; sides of the neck ashy-brown, continued back and meeting round the neck; upper plumage, wings and tail olive-brown, tinged with rufous on the tail; chin and cheeks black; throat and breast streaked ashy and white;

abdomen rufous; sides, thighs and under tail-coverts olivaceous brown, under wing-coverts rufous.

Colours of soft parts. Bill horny black; legs, feet and claws light brown or slaty-brown; iris crimson.

Measurements. Length about 215 to 230 mm.; wing 80 to 83 mm.; tail about 90 mm.; tarsus about 32 mm.; culmen about 18 mm.

Distribution. The Coorg and Wynaad Hills above 4,000 feet. Mr. Morgan gives the Pálghát Hills and the Chinna Coonoor Ghat as a part of its range, but these have not been confirmed.

Nidification. Not recorded.

Habits. Similar to those of *T. c. cachinnans.*

(168) Trochalopterum jerdoni fairbanki.

THE TRAVANCORE LAUGHING-THRUSH.

Trochalopterum fairbanki Blanf. J. A. S. B., xxxvii, 2, p. 175 (1868) (Palni Hills); Blanf. & Oates, i, p. 99.

Vernacular names. None recorded.

Description. Differs from the Banasore Laughing-Thrush in having the forehead, crown and nape black or nearly so; the chin and cheeks ashy-grey instead of black and the lower parts a much brighter rufous.

Colours of soft parts. Iris dark red or red-brown (*Fairbank*).

Measurements. Length about 225 to 230 mm.; wing about 87 to 90 mm.; tail about 92 to 95 mm.; tarsus about 32 mm.; culmen about 20 mm.

Distribution. The Palni and Annamulli Hills in S. Travancore.

Nidification. Fairbank took the nest of this bird at Kodaikanal in the Palni Hills in May, and I have received three clutches from the collection of the late Rev. Howard Campbell as *cachinnans*, taken at the same place and evidently those of *fairbanki.* They were taken in February, April and May, and are indistinguishable from those of the former Laughing-Thrush. They measure about $25{\cdot}8 \times 19{\cdot}3$ mm.

Habits. Similar to those of *cachinnans.* This Laughing-Thrush is found from 3,000 up to 7,000 feet or rather higher.

(169) Trochalopterum jerdoni meridionale.

BLANFORD'S LAUGHING-THRUSH.

Trochalopteron meridionale Blanf., Hume, S. F., vii, p. 36 (1878) (Travancore); Blanf. & Oates, i, p. 100.

Vernacular names. None recorded.

Description. Differs from the Banasore Laughing-Thrush in having a much shorter white supercilium with no black lines

above it. The lores and whole crown to nape are dusky brown; the chin is nearly white and the centre of the abdomen also is white.

Colours of soft parts. Iris dark red; bill black; legs dusky (*Bourdillon*).

Measurements about the same as *fairbanki*.

Distribution. North Travancore; there are specimens in the British Museum from Chinnipanni, the Patnas, Mynall and the Tinnevally boundary, and Mr. J. Stewart obtained it at the Autchincoil Gap on the Ghats.

Nidification. Mr. J. Stewart appears to be the only collector who has seen the nest of this bird. He describes it as just like most nests of *cachinnans*; it was taken at about 3,000 feet. The eggs are more Thrush-like than are those of any other of the South Indian Laughing-Thrushes, and might be matched in colour by many eggs of *Merula simillima*. The ground-colour is a very pale blue-green, and the markings consist of rather numerous blotches, smears and spots of reddish brown, mostly on the larger end, where in one egg they form a dense ring. The three eggs average about 25·5 × 19·1 mm. I expect these eggs are somewhat abnormal in coloration.

Habits. Those of the preceding bird.

(170) Trochalopterum virgatum.

THE MANIPUR STREAKED LAUGHING-THRUSH.

Trochalopteron virgatum Godw.-Aust., P. Z. S., 1874, p. 46 (Razami, Naga Hills); Blanf. & Oates, i, p. 100.

Vernacular names. *Dao-phéré* (Cachari).

Description. Point of the forehead and a long supercilium extending to the nape white; lores ferruginous; cheeks, lower part of ear-coverts and under the eye fulvous-white; upper part of ear-coverts ferruginous, with pale shaft-streaks; crown, nape, mantle, lesser wing-coverts and sides of the neck reddish brown, with very white shafts; lower back, scapulars, rump and upper tail-coverts ashy-brown, with white shafts; tail olive-brown, distinctly cross-rayed; the outer feathers tipped with white; greater wing-coverts chestnut, with white shafts and tips; primary-coverts pale rufous, with white shafts and brown tips; winglet deep ashy, with the outer webs white along the shafts; wings ashy; the middle feathers washed with chestnut and the inner secondaries edged with paler ashy; chin and throat deep chestnut, shading off into yellowish-buff on the remainder of the lower plumage, all the feathers with white shafts.

Colours of soft parts. Legs and feet pale horny or fleshy, the soles paler and more yellow; bill dark brown, paler at the gape; iris hazel-brown; orbital skin dusky plumbeous.

Measurements. Length about 250 mm.; wing 85 to 89 mm.;

tail about 110 to 115 mm.; tarsus about 31 mm.; culmen about 17 mm.

Distribution. Hills south of the Brahmaputra, Manipur, Lushai and Chin Hills.

Nidification. This Laughing-Thrush breeds throughout its range between 3,000 and 8,000 feet, making a deep, compact, cup-shaped nest of leaves, roots, bamboo leaves and grass, and always with more or fewer tendrils and a little moss. The lining is of roots and moss roots or fern-rachides, and the inner cup usually measures about 4 in. × 2·75 in. or less and the outer about 6 in. × 5 in. Most nests are placed close to the ground in dense tangles of creepers and vines or thick bushes, but they sometimes select higher bushes or small saplings for nesting purposes. Eggs may be found from May to July. These are either two or three in number and are a pale unspotted blue with a soft satiny texture, almost glossless though intensely smooth. 100 eggs average 26·0 × 19·2 mm.

Habits. This is not a gregarious bird and I have generally seen it in pairs only, nor is it as noisy as most of its relations though it has some quite sweet conversational and call-notes. It keeps almost entirely to thick undergrowth of forests or to the ground itself in bracken and brambles. Those I examined had fed on insects only, chiefly a small grasshopper and a very odoriferous little bug, but doubtless they also eat seeds. They are found up to 8,000 feet or over and never descend below some 3,000 feet.

Trochalopterum lineatum.

Key to Subspecies.

A. Head and mantle ashy with dusky streaks.	
a. Lower plumage rufescent.	
a'. Grey margins to feathers narrow ..	*T. l. lineatum*, p. 180.
b'. Grey margins to feathers broad	*T. l. griseicentior*, p. 181.
b. Lower plumage paler and more grey.	
c'. Ear-coverts chestnut.............	*T. l. gilgit*, p. 182.
d'. Ear-coverts pale rusty	*T. l. ziaratensis*, p. 182.
B. Head and mantle reddish brown with glistening black shaft-stripes	*T. l. imbricatum*, p. 183.

(171) Trochalopterum lineatum lineatum.

THE NEPALESE STREAKED LAUGHING-THRUSH.

Cinclosoma lineatum Vigors, P. Z. S., 1831, p. 56 (Nepal).
Trochalopterum lineatum. Blanf. & Oates, i, p. 101.

Vernacular names. None recorded.

Description. Forehead, crown, nape and mantle dark ashy streaked with dusky, the shafts black; lower back and wing-coverts reddish brown, the shafts white; rump and upper tail-

coverts plain ashy; tail marked with rufous, cross-rayed, with a subterminal black band and grey tips: wings chiefly rufous on the outer webs, the inner secondaries edged with grey; lores and a ring round the eye mingled white and grey; cheeks, ear-coverts and an indistinct supercilium castaneous; chin, throat, breast and upper abdomen chestnut, all the feathers with ashy margins and those of the breast with glistening white shafts; lower abdomen, flanks and under tail-coverts ashy-brown.

Colours of soft parts. Bill dusky, the base of the lower mandible greyish or brownish-horny; iris brown or reddish brown; feet fleshy-brown, claws livid horny.

Measurements. Length about 200 to 210 mm.; wing 74 to 77 mm.; tail about 90 mm.; tarsus about 27 mm.; culmen 18·5 to 20·8 mm.

Distribution. Nepal, Sikkim.

Nidification and **Habits** similar to those of the better known form, next described. Eggs taken in Native Sikkim and Darjeeling average about 26·0 × 18·8 mm.

(172) Trochalopterum lineatum griseicentior.

THE SIMLA STREAKED LAUGHING-THRUSH.

Ianthocincla lineatum griseicentior Hartert, Vög. Pal., i, p. 636 (1910) (Simla).

Vernacular names. None recorded.

Description. A paler bird than the preceding, both above and below, with much broader grey edges to the feathers of the underparts.

Colours of soft parts and **Measurements** as in *T. l. lineatum*.

Distribution. Garhwal, Kumaon, Simla and S. Kashmir.

Nidification. The Simla Streaked Laughing-Thrush breeds in great numbers throughout its range between 5,000 and 8,000 feet. The breeding season is very extended and eggs have been taken in every month from March to September, though probably those laid in July to September are second broods. The nests are made of dry grass, leaves, small pliant twigs and stems of plants, scraps of bracken and roots and they are lined with either roots or grass stems, generally the latter. They are bulky nests measuring roughly anything from 6″ to 10″ in outward diameter by some 3″ to 5″ in depth, the egg-cavity being about 3″ × 2½″ or rather more. It is placed either in some thick bush in undergrowth or on a branch low down in a big tree, the Deodar being a special favourite and, though so big a nest, is always well concealed. The normal full clutch of eggs is three, rarely four and not seldom two only. They are unspotted blue-green in colour and have a smooth satiny surface with but little gloss. 100 eggs average 25·6 × 18·4 mm.

Habits. This Laughing-Thrush is one of the most common birds about nearly all our North-West hill-stations in every kind of forest and jungle where there is sufficient undergrowth. It wanders about in pairs or small parties of four or five, constantly chattering and calling but, though not shy or wild, keeping much out of view in the thick undergrowth, where it hunts for seeds and insects. It is loth to take to flight but when forced to do so, the flock takes wing one by one, fluttering feebly to the next piece of cover much in the same way as do the birds of the genera *Argya* and *Turdoides*.

(173) Trochalopterum lineatum gilgit.

THE GILGIT STREAKED LAUGHING-THRUSH.

Ianthocincla lineatum gilgit Hartert, Vög. Pal., i, p. 636 (1910) (Gilgit).

Vernacular names. None recorded.

Description. This race is still paler than the last and more grey, less rufous, in tint both on the upper and lower plumage.

Distribution. Gilgit, Chitral and N. Kashmir.

Nidification and **Habits** similar to those of the last bird. Two clutches of eggs average 24·9 × 18·5 mm.

(174) Trochalopterum lineatum ziaratensis.

THE BALUCHISTAN STREAKED LAUGHING-THRUSH.

Ianthocincla lineatum ziaratensis Ticehurst, Bull. B. O. C., xli, p. 55 (1920) (Ziarat).

Vernacular names. None recorded.

Description. Differs from "*I. l. gilgit* in having much paler rusty, not chestnut, ear-coverts; grey, not olive-brown, rump and tail-coverts, and grey, not grey-brown, belly; the markings on the breast paler and yellower, not red-brown; the golden-brown edges to the wings and tail are also somewhat paler. It lacks the white-ticked throat which *I. l. gilgit* has."

Colours of soft parts and **Measurements** as in *T. l. lineatum.*

Nidification. Two eggs from Quetta measure 26·1 × 18·7 mm. The nest was said to have been placed in scrub growing in a ravine on an otherwise bare and stony hill.

Habits. Apparently is often found in the low scrub-jungle which grows here and there in the ravines in the hills, as well as in the better wooded parts.

(175) Trochalopterum lineatum imbricatum.

THE BHUTAN STREAKED LAUGHING-THRUSH.

Garrulax imbricatus Blyth, J. A. S. B., xii, p. 951 (1843) (Bhutan).
Trochalopterum imbricatum. Blanf. & Oates, i, p. 102.

Vernacular names. None recorded.

Description. Differs from the other three races in having the head, neck and mantle concolorous with the rest of the body, the shafts black and glistening; the lores, supercilium and sides of the head greyish-brown with white shafts.

Colours of soft parts not recorded.

Measurements as in *T. l. lineatum.*

Distribution. Bhutan only.

Nidification and **Habits** unknown.

(176) Trochalopterum henrici.

PRINCE HENRY'S LAUGHING-THRUSH.

Trochalopterum henrici Oustalet, Ann. Sci. Nat., (7) xii, p. 274 (1891) (Tibet).

Vernacular names. *Jorno* = the lady (Tibet).

Description. Upper parts and wing-coverts dark olive-brown, the crown slightly darker; lores and a line through the eye and ear-coverts dark chocolate; quills blackish edged with lavender-grey; tail blackish brown, broadly tipped with white; a broad white stripe through the cheeks; a small white supercilium; below the same colour as above, but paler and the flanks and under tail-coverts chestnut-red.

Colours of soft parts. Bill and legs dark plumbeous; iris crimson.

Measurements. Total length about 270 to 280 mm.; wing 110 to 115 mm.; tail about 150 mm.; culmen about 22 mm.; tarsus about 37 mm.

Distribution. Tibet, and it has been obtained by Col. F. M. Bailey at Shoaka, 9,000 feet, in the Mishmi Hills.

Nidification unknown.

Habits. "It is found in the same poplar and alder bushes as the *Babax*, but also comes up quite close to the villages. It has the characteristic habits of a Babbler to a marked degree, roves about in parties of eight or more individuals, chatters most noisily, uttering its fluty call of 'Whoh-hee Whoh-hee,' is always on the move, scampering along the branches, seldom showing itself, and flying very low across a clearance to the next cover." (*Waddell*).

Genus **GRAMMATOPTILA** Reichnb., 1850.

The genus *Grammatoptila* contains but one species, which may be recognized by its stout, deep and short bill, striated plumage and by the long frontal hairs which reach over the nostrils. It is in habits and nidification near *Trochalopterum*, and seems to form a link between the true Laughing-Thrushes and the birds of the genera *Turdoides* and *Argya*. There are two geographical races.

Grammatoptila striata.

Key to Subspecies.

A. Feathers of crest not streaked with white; no brown bands on sides of crown .... *G. striata striata*, p. 184.
B. Feathers of crest streaked with white; a brown band on either side of crown .... *G. s. austeni*, p. 185.

(177) Grammatoptila striata striata.

THE STRIATED LAUGHING-THRUSH.

Garrulus striatus Vigors, P. Z. S., 1830, p. 7 (Himalayas, Naini-Tal).
Grammatoptila striata. Blanf. & Oates, i, p. 103.

Vernacular names. *Nampiok-pho* (Lepcha); *Kopiam* (Bhut.).

Description. Whole upper plumage, sides of head and neck, chin and throat umber-brown, darkest on the crown, shading off

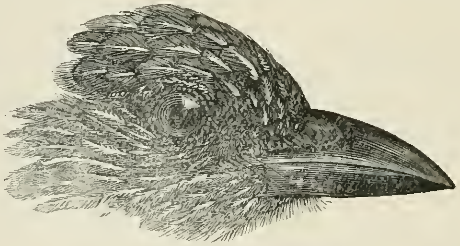


Fig. 30.—Head of *G. s. striata*.

into pale brown on the lower plumage; every feather of the whole plumage including inner secondaries but not other quills, with a long median white streak, the streaks larger but less defined on the abdomen and under tail-coverts; quills dark brown, the outer webs of the first few primaries hoary, of the others pale chestnut; tail chestnut, the outer feathers with a minute white tip,

Colours of soft parts. Iris lake or reddish brown; bill black; legs dull slate or slaty-brown.

Measurements. Length about 300 to 310 mm.; wing about 140 to 150 mm.; tail about 132 to 136 mm.; tarsus about 42 mm.; culmen about 25 mm,

Distribution. Himalayas from the Sutlej Valley to Bhutan.

Nidification. The Striated Laughing-Thrush breeds throughout its range at heights varying between 3,500 and 7,000 feet, but is not often found nesting below 4,500 feet. The nest is a large, rather deep cup, about 9 to 10 inches in diameter by some 4 to 5 deep and is composed largely of moss with grass, leaves, roots and tendrils mixed and a compact lining of roots. It is generally placed some 6 to 12 feet up in small saplings and other trees. The eggs are almost invariably two in number and are long ovals of pale blue, in nearly every case spotless, but rarely with a few tiny specks of blackish or reddish. They average about 33·8 × 23·2 mm.

This is a very favourite fosterer for the Red-winged Cuckoo (*C. coromandus*). The breeding season lasts from April to July.

Habits. This bird is a true Laughing-Thrush in its habits but is more arboreal than most, frequenting both bush and the lower trees alike. It is found in pairs and small parties and is very loquacious, some of its notes being likened by Jerdon to those of a hen which has laid an egg. It feeds on insects and fruit and seeds, the latter to a greater extent than most of the family.

(178) Grammatoptila striata austeni.

AUSTEN'S STRIATED LAUGHING-THRUSH.

Grammatoptila austeni Oates, Avifauna B. I., i, p. 104 (1889) (Dafla Hills).

Vernacular names. *Daopa* (Cachari).

Description. Differs from the preceding bird in having two broad dark coronal bands meeting on the nape; no shaft-stripes on the crown, and those elsewhere narrower but better defined.

Colours of soft parts. Iris red-brown to dark red; legs and feet pale slaty-grey, soles yellowish; bill dark slaty-brown or "bluish-horny" (*Stevens*).

Measurements as in *G. striata striata.*

Distribution. Hills south of the Brahmaputra as far east as Margherita. Stevens procured this form on the eastern watershed of the Sabansiri River, and Falkiner and Kemp both procured it on the Mishmi Expedition, so that it appears to work round the head-waters of the Brahmaputra, Dibong and Dihong as far west as this river.

Nidification. I found this bird breeding freely above 4,500 feet in the Khasia Hills and more rarely so in the N. Cachar Hills. Nest and eggs like those of the last bird, but I have never seen any egg marked at all. Twenty eggs average about 31·5 × 23·5 mm.

Habits. Frequents pine-woods as well as other forest, provided there is any undergrowth; otherwise its habits are like those of *G. s. striata.*

Genus **STACTOCICHLA** Sharpe, 1883.

This genus contains a single species, a brown bird with a spotted breast extremely Thrush-like in appearance. The bill is long and slender, the tail and wing about equal in length, the latter short and rounded as usual. A new form of this species has recently been described from Annam *.

(179) Stactocichla merulina merulina.

THE SPOTTED-BREASTED LAUGHING-THRUSH.

Garrulax merulinus Blyth, J. A. S. B., xx, p. 521 (1851) (Manipur).
Stactocichla merulina. Blanford & Oates, i, p. 104.

Vernacular names. *Moh mepeh* (Angami Naga).

Description. A narrow white streak above the ear-coverts; forehead mottled with grey; remainder of upper plumage, exposed parts of wings and tail rufescent olive-brown; chin, throat and breast yellowish buff, broadly streaked with oval black stripes; centre of abdomen the same colour unstriped; flanks rufescent olive-brown; under tail-coverts bright ochraceous.

Colours of soft parts. Iris pale yellowish or pinkish, brown in young birds; legs and feet pale to dark brown, the soles paler and claws darker; bill dark horny-brown, black at tip and on culmen, greyish on lower mandible.

Measurements. Length about 260 to 270 mm.; wing 93 to 99 mm.; tail about 96 mm.; tarsus about 40 mm.; culmen about 24 mm.

Distribution. Hills South of the Brahmaputra South to Manipur and Lushai, East to Lakhimpur.

Nidification. Breeds above 3,500 feet from April to July, but principally in the end of June, both in bamboo-jungle and in forest. In the former the nest is made almost entirely of bamboo leaves, mixed with grass, moss, roots, etc., and lined with roots; when placed in forest the major part of the materials is moss mixed with dead leaves, roots, tendrils, etc., and lined with moss and fern roots. In shape a hemispherical cup, it is generally placed close to the ground either in a bamboo clump or a dense bush, more seldom in a high bush or small sapling.

The eggs, two or three in number, are large replicas of those of *Trochalopterum virgatum*, a shade darker, perhaps, but of the same shape and texture. 50 eggs average 28·7 × 21·7 mm.

Habits. Although so aberrant in appearance, this is a true Laughing-Thrush in its habits; very gregarious, it is found in flocks of ten to twenty individuals; very noisy, it possesses a wide range of very beautiful notes as well as many others less pleasing; a terrible skulker, it is one of the hardest birds to watch or procure.

---

* Robinson & Kloss, Ibis, 1919, p. 577 (S. Annam).

In Manipur Hume found them frequenting secondary growth in deserted clearings, but in N. Cachar they preferred deep, wet forest with an undergrowth of bracken, caladiums, jasmine and raspberries, which grew in dense matted profusion everywhere. In bamboo-jungle they were easier to watch, and I often saw them hopping about feeding among the fallen leaves, but any movement drove them off at once and they took to wing and flew better than most of their nearest relations.

Genus **BABAX** David, 1876.

The Babblers of this genus form a connecting-link between *Trochalopterum* and the genera already dealt with and *Argya* and *Turdoides*, being on the whole nearer the latter than the former group. The wing is short and rounded, the tail long and much graduated. The bill is rather slender, slightly curved, and in length about equal to, or longer than, hind toe and claw together. The rictal bristles are strong and of considerable length, and the oval, exposed nostrils are overhung by numerous hairs.

There are several species of this genus found on the borders of the Indian Empire, of which three enter our limits, whilst others may possibly be found to do so in extreme Northern Burma when the ornithology of that country is better known.

Key to Species and Subspecies.

A. Plumage boldly striped above and below.
  a. Wing under 110 mm.; plumage rufescent.
    a'. Throat immaculate buffy white ...... *B. l. lanceolatus*, [p. 187.
    b'. Throat white with black shafts to the feathers .... *B. l. victoriæ*, p. 188.
  b. Wing over 110 mm.; plumage grey...... *B. waddelli*, p. 189.
B. Plumage rufous above and below, stripes absent or obsolete .... *B. koslowi*, p. 189.

(180) Babax lanceolatus lanceolatus.

THE CHINESE BABAX.

Pterorhinus lanceolatus Verr., Nouv. Arch. Mus. Paris, vi, p. 36 (1871) (Chinese Tibet).

Vernacular names. None recorded.

Description. Crown bright rufous-brown with dark centres to the feathers; remainder of upper plumage and wing-coverts darker rufescent brown, each feather broadly edged with pale fulvous grey, white on sides of neck, almost so on nape and darkest on rump; upper tail-coverts grey with obsolete concealed dark centres; tail rufous-brown, duller than crown; lores and forehead fulvous, the latter merging into the crown; ear-coverts striped white and brown; a broad moustachial streak varying from chestnut to almost black; chin, throat and upper breast

fulvous white, a few indistinct dark striæ on the latter; sides of breast and flanks pale fulvous with broad brown and chestnut streaks, disappearing on the abdomen and centre of breast; under tail-coverts and thighs earthy-brown.

Colours of soft parts. Iris white to bright orange; bill horn-coloured; legs paler horny-brown.

Measurements. Wing 93 to 115 mm.; tail 125 to 140 mm.; tarsus about 38 mm.; culmen 27 to 28 mm. The largest and smallest birds come from the same place. Hartert gives the wing up to 110 mm.

Distribution. I cannot distinguish between *lanceolatus*, *yunnanensis* and *bonvaloti*; the range therefore of this Babax is E. Tibet, W. China, Yunnan, Kachin Hills and N. Shan States.

Nidification. This bird was found breeding by Harington, Pershouse and others in the Bhamo Hills between 5,000 and 6,000 feet, making a cup-shaped nest of dead leaves, grass, bits of bracken, etc., lined with roots and placed in low bushes in thin scrub-jungle or mixed bracken and bush. The breeding season appears to be April to June. The eggs number from two to four, generally three, and are rather long, pointed ovals in shape, rather dark spotless blue in colour, and with a fine, close texture and surface but no gloss. 15 eggs average about 27·3 × 20·3 mm.

Habits. This Babax is said to haunt thin scattered forest or "the more open hillsides, which are covered with bracken and bramble bushes, and never enters the dense secondary growth which springs up after cultivation" (*Harington*). They go about either in pairs or small parties and keep up a continuous flow of soft and musical notes, varied occasionally by a harsher outburst. They are no better fliers than the rest of the family, and are equally strong and active on their legs.

(181) Babax lanceolatus victoriæ.

The Mount Victoria Babax.

Babax victoriæ Rippon, Bull. B. O. C., xv, p. 97 (1905) (Mt. Victoria, Chin Hills).

Vernacular names. None recorded.

Description. Differs from *lanceolatus* in having the throat and upper breast a purer white and the black shaft-stripes extending right up to the chin, whereas in typical *lanceolatus* there are no stripes on chin or throat and often not on the upper breast. In this bird also the moustachial stripe is very black and broad.

Colours of soft parts. "Irides yellow; bill dark horny; legs and feet lighter" (*Rippon*).

Measurements. Wing 100 mm.; tail 140 mm.; tarsus 35 mm.; culmen 25 mm.

Distribution. Chin Hills.

Nidification. Nests taken by Venning and Grant in the Chin Hills are described as open cups made of dead leaves and coarse grass stems lined with roots and placed in low thorny bushes on open hillsides or near swamps. They were found in April and May, and contained from two to three eggs similar to those of the preceding subspecies and measuring about 27·5 × 20·4 mm.

Habits. This Babax is found from 5,000 to at least 9,000 feet, haunting the same kind of country as the last bird, which it closely resembles in all its habits.

(182) Babax waddelli.

The Giant Tibet Babax.

Babax waddelli Dresser, P. Z. S., 1905, i, p. 54 (Tsangpo, Tibet).

Vernacular names. *Sorio*, *Teh-teh* (Tibet); *Kyu-mo* (Gyantse, Tibet).

Description. Whole plumage ashy-grey; above with broad streaks of blackish brown edged with dull chestnut; below with narrower streaks but with the chestnut brighter; centre of belly, vent, under tail-coverts and thighs cinereous ashy without stripes; on the ear-coverts the central marks are obsolete, but on the cheeks form a broad, black moustachial stripe.

Colours of soft parts. Iris yellow; bill black; legs dark brown.

Measurements. Wing 132 to 140 mm.; tail 148 to 160 mm.; tarsus 40 to 43 mm.; culmen 33 to 37 mm.

Distribution. South Tibet and the extreme north-east of Sikkim *.

Nidification. The Giant Babax breeds freely in South Tibet from 11,000 to 14,000 feet, or higher, during May, June and July, a few odd birds breeding both earlier and later. The nest is a large, rather rough cup of grass, dead leaves, fern fronds, roots, wool, etc., lined with finer roots and fern stems or fine grass. It measures externally some 7 inches in diameter by 3 to 4 deep, and has an internal cup of about 4″ by 2″ or rather less. It is placed low down in the small thorny bushes which cover parts of the Tibetan plateaus or in willow-trees and small saplings. The eggs are two or three in number and similar to those of the last but averaging about 33·1 × 21·6 mm.

Habits. This is a very common Babax over the greater portion of South Tibet, going about in small parties of five or six birds and having all the habits of the true Laughing-Thrushes. They are great skulkers, keeping much to the ground or to the lower bushes and scrub, and though they come close to dwelling-houses,

* *Babax koslowi*, an all rufous bird with obsolete streaks only, is found on the Mekong watershed and is sure to enter parts of N. Burma.

they seldom show themselves. Their food is chiefly, perhaps wholly, insectivorous, and their call is said to consist of two harsh notes, rapidly repeated.

Genus **TURDOIDES** Cretzschmar, 1826.

This genus contains the well-known Babblers called "The Seven Sisters" over so great a part of India. Unfortunately we cannot employ either *Crateropus* or *Malacocercus* as a name for the genus, and it must now be known as *Turdoides*.

It differs from the True Laughing-Thrushes of the preceding genera in having the covering membrane of the nostrils more or less covered by plumes, though they have no overhanging hairs. The rictal bristles are short and stout and the feathers of the forehead short, firm and close. The tail is about the same in length as the wing and well graduated, the outermost pair being about two-thirds the length of the central feathers. The wing is short and rounded, the third or fourth primary being the longest.

There are two species which call for remark in this genus, *Turdoides rufescens* and *Turdoides cinereifrons*. The former, the Ceylon Babbler, is supposed to differ in having the feathers of the forehead bare at the tips and spinous; it has accordingly been generically separated with *Argya subrufa* as *Layardia*. The difference seems to me very minute, sometimes hardly visible, and does not constitute sufficient cause for removal to another genus. The other characteristic, referred to by Harington, is the more slender, wholly black bill, but the difference between this and the shorter yellow bill of others is bridged over by the intermediate yellow and black bill of *Argya subrufa*.

The second bird, the Ashy-headed Babbler, differs only from typical *Turdoides* in having a longer bill, coloured black instead of pale yellow or white as in the other species. There does not appear to be any other difference, and though when first seen the bird appears to be nearer *Garrulax* or *Dryonastes* than *Turdoides*, I can see no sufficient reason for instituting a new genus for it. Its habits and nidification may assist when these are known.

Key to Species and Subspecies.

A. Throat ashy, mottled with pale brown; breast ashy-fulvous.	
a. Upper plumage paler with very indistinct shaft-streaks	*T. terricolor terricolor*, p. 191.
b. Upper plumage darker and browner with distinct shaft-streaks	*T. t. malabaricus*, p. 192.
c. Paler and more grey everywhere, with shaft-streaks obsolete	*T. t. sindianus*, p. 193.
B. Throat and breast dark brown or black with ashy margins.	
d. Tail ashy and brown; primaries edged paler.	

a'. Ear-coverts blackish and darker than the rest of the head......	*T. griseus griseus*, p. 193.
b'. Ear-coverts same as the rest of the head....................	*T. g. striatus*, p. 194.
e. Tail rufous; primaries without pale edges.	
c'. Throat and breast mottled with brown......................	*T. somervillei*, p. 194.
C. Throat and breast uniformly rufous..	*T. rufescens*, p. 195.
D. Throat pale rufous, breast dark rufous.	*T. cinereifrons*, p. 196.

(183) Turdoides terricolor terricolor.

THE BENGAL JUNGLE-BABBLER.

Pastor terricolor Hodgs., J. A. S. B., v, p. 771 (1836) (Nepal).
Crateropus canorus. Blanf. & Oates, i, p. 110.

Vernacular names. *Chatarhia* (Beng.); *Pengya-maina* (Hind. in the U.P.); *Sat Bhai*, *Jangli-khyr*, *Ghonghai* (Hind.); *Pedda-Sida* (Tel.); *Kutch-batchia* (Behar).

Description. Upper plumage, coverts and inner secondaries pale brown, cinereous on the head and rump, slightly fulvous on

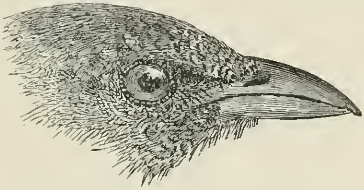


Fig. 31.—Head of *T. t. terricolor*.

the upper tail-coverts, the back with dark brown streaks and whitish shaft-stripes; tail brown, paler towards the base and darker towards the end, which is tipped with white and cross-rayed; wings dark brown, edged with ashy on the outer webs; lores whitish with a narrow black line above them; sides of the head like the crown; chin and throat cinereous, faintly cross-barred darker; breast fulvous ashy with whitish shafts; abdomen, vent and under tail-coverts fulvous; the sides tinged with brown and with faint white shafts.

Colours of soft parts. Iris white, yellowish white or creamy white; orbital skin pale yellow; legs and claws yellow, chrome-yellow, fleshy-yellow or yellowish white; bill chrome-yellow, yellowish white, dirty whitish or, rarely, pale horny-yellow.

Measurements. Length 250 to 260 mm.; wing 103 to 110 mm.; tail 108 to 115 mm.; tarsus about 32 to 34 mm.; culmen about 25 to 26 mm.

Distribution. Northern India from the U.P., Eastern Rajpu-

tana to Bengal, south to Orissa, across to about the latitude of Bombay.

Nidification. The Jungle-Babbler breeds principally in June and July after the break of the monsoon, but odd nests with eggs may be found any time from March to September. They are built of grass, leaves, roots, etc., carelessly bound together with weeds, twigs and tendrils, and lined with grass or roots, and they may be placed in any kind of bush or tree at heights of a few inches only to 30 feet from the ground. The usual number of eggs is four, but Inglis has taken seven from the same nest, all apparently *Turdoides* eggs, and not those of the Common Hawk-Cuckoo or Pied Cuckoo, both of which victimize this Babbler very freely. It is sometimes difficult to tell the Cuckoos' eggs from those of their fosterers, but as a rule they are much less glossy, a softer, more satiny texture and more elliptical in shape. The Babblers' eggs are typically a deep Hedge-sparrow blue, intensely glossy, and 100 eggs average about $25{\cdot}2 \times 19{\cdot}6$ mm.

Habits. The "Seven Sisters" have obtained this name from the fact that they go about in flocks of six to a dozen, but very frequently numbering exactly seven, and their sisterhood or brotherhood they show by the manner in which each individual resents any interference from outside to any of the party yet retains full liberty to argue, disagree and fight with any one or all of the other six. They are noisy, hysterical and active birds so long as they are not forced to fly, and anything out of the common at once attracts their attention and calls forth a babel of comment and assertion which rises crescendo until something else diverts them. Their excitement seems to be equally intense and voluble whether caused by some mere insect or by the murder of one of their party by a Hawk. They may be scattered at the moment, but within a second or two all have taken a few prodigious hops and have collected together either to discuss the object of interest or to defend the member in danger. They are very brave birds, and when attacked throw themselves on their back and fight with bill and claws, whilst their comrades throw themselves with fury on the assailant, whether cat, hawk or some smaller vermin. They seem to prefer the vicinity of humanity to the wilds, but are found over their whole range where the country is sufficiently, yet not too, densely wooded.

(184) Turdoides terricolor malabaricus.

THE SOUTHERN JUNGLE-BABBLER.

Malacocercus malabaricus Jerd., B. of I., ii, p. 62 (1877) (Malabar).

Vernacular names. *Pedda sida* (Tel.).

Description. Differs from the northern bird in being very much darker both above and below, most noticeably so on the

chin, throat, breast and flanks. The darker edging to the feathers also show up the central pale streaks more vividly.

Colours of soft parts and Measurements as in the last.

Distribution. India South of the habitat of *T. t. terricolor.*

Nidification and Habits similar to those of the Northern Babbler. Twenty eggs average about 23·8 × 18·6 mm.

(185) Turdoides terricolor sindianus.

THE SIND JUNGLE-BABBLER.

Turdoides terricolor sindianus Ticehurst, Bull. B. O. C., xl, p. 156 (1920) (Karachi, Sind).

Vernacular names. None recorded.

Description. Similar to *terricolor* but paler, upper parts greyer and with the dark streaks ill-defined or obsolete; throat paler dusky grey; belly paler cream-colour.

Colours of soft parts and Measurements as in the other two races.

Distribution. Sind, Western Rajputana (Mt. Aboo) and Punjab.

Nidification. Breeds in Sind in July and in the Punjab in April, May and June and apparently again in September. Twenty-one eggs average 24·1 × 17·9 mm.

Habits. Those of the species.

(186) Turdoides griseus griseus.

THE WHITE-HEADED BABBLER.

Turdus griseus Gmel., Syst. Nat., i, p. 824 (1788) (Carnatic).
Crateropus griseus. Blanf. & Oates, i, p. 112.

Vernacular names. *Khyr* (Hindi); *Chinda* or *Sida* and *Kalli-Karavi* (Tel.).

Description. Whole upper part of head dingy greyish white; cheeks and ear-coverts brown; upper plumage ashy-brown, the feathers of the back with white shaft-stripes and a black streak on either web; quills black, narrowly edged on the outer webs with ashy; tail ashy-brown on the basal and dark brown on the terminal half, which is tipped with whitish; tail and inner secondaries cross-rayed with blackish; chin, throat and breast dull blackish, the feathers edged ashy; middle of abdomen fulvous; remainder of lower plumage brown.

The colour of the head varies greatly; in some specimens, obviously young, the head hardly differs from the back, and it varies from this colour to a dirty or creamy white.

Here and there very pale individuals are met with which have a strong erythristic tendency both above and below, two such from Travancore having bright rust-red patches on the back and breast;

a third from Mysore and yet another from the Wynaad show similar but less red markings.

Colours of soft parts. Iris creamy or yellowish white; orbital skin, bill, legs and feet yellowish white to almost chrome-yellow.

Measurements. Length about 230 to 235 mm.; wing about 98 to 104 mm.; tail about 100 mm.; tarsus about 32 mm.; culmen about 17 mm.

Distribution. Southern India up to a line from Ellore, Secunderabad and Belgaum.

Nidification. Breeds all over South India in the plains and lower hills up to some 2,000 feet, having two broods, the first in April to June and the second in September to November, odd birds laying at other times throughout the year. Nest and eggs are typical of the genus, the latter numbering three or four, whilst sixty eggs average 24·0 × 18·8 mm.

Habits. Those of the genus.

(187) Turdoides griseus striatus.

THE CEYLON BABBLER.

Malacocercus striatus Swains., Zool. Ill., p. 127 (1831) (Ceylon).
Crateropus griseus. Blanf. & Oates, i, p. 112.

Vernacular names. *Demelitcha* (Ceylon); *Punil* (Tam.).

Description. The Ceylon Babbler differs from *T. g. griseus* in having the head concolorous with the back; the dark and light streaks to the back are less well-defined.

Colours of soft parts as in the White-headed Babbler.

Measurements. Wing about 110 mm.

Distribution. Ceylon only. Individuals are obtained in South India which approach this race in colour, but they are all, possibly, young birds and should be referred to the former rather than to the present race.

Nidification. This Babbler breeds in great numbers in parts of Ceylon, laying normally three eggs, often only two and very rarely four. Neither nest nor eggs can be distinguished from those of *T. g. griseus*, and a fine series of fifty eggs collected for me by Messrs. W. E. Wait and W. W. A. Phillips average 23·8 × 18·4 mm.

Habits. Those of the genus.

(188) Turdoides somervillei.

THE BOMBAY BABBLER.

Timalia somervillei Sykes, P. Z. S., 1832, p. 88 (Bombay).
Crateropus somervillii. Blanf. & Oates, i, p. 113.

Vernacular names. None recorded.

Description. Forehead, crown and nape dark brown, the feathers

with narrow pale edges; lores white; sides of the head and neck, back, wing-coverts and inner secondaries paler brown tinged with rufous, the feathers of the back with white shafts; rump and upper tail-coverts ferruginous; tail reddish brown, both tail and inner secondaries cross-rayed with blackish; primaries and outer secondaries black; chin and throat dark brown, each feather with a broad ashy margin; breast brown with broad white shaft-streaks; abdomen, vent and under tail-coverts deep ferruginous; tail tipped paler below.

Colours of soft parts. Iris creamy or yellowish white; orbital skin pale yellow; bill, legs and feet pale yellow or fleshy-yellow.

Measurements. Length about 250 to 260 mm.; wing 97 to 105 mm.; tail about 100 mm.; tarsus about 32 mm.; culmen about 20 to 21 mm.

This species is easily distinguished from all others by its rufous rump and tail and deep ferruginous lower parts.

Distribution. Travancore to Bombay along the West Coast.

Nidification. This Babbler breeds throughout its range in practically every month of the year. The nest is made of grass, occasionally mixed with grass-roots, fine twigs, etc., and lined with fine roots or grass-stems. It is placed in a bush or small tree, very often in date-palms. The eggs which number two or three, very rarely four, are of the usual glossy deep blue and thirty-six average about $24{\cdot}2 \times 19{\cdot}5$ mm.

Habits. Those of the genus.

(189) Turdoides rufescens.

THE CEYLONESE BABBLER.

Malacocercus rufescens Blyth, J. A. S. B., xvi, p. 453 (1847) (Ceylon).
Crateropus rufescens. Blanf. & Oates, i, p. 114.

Vernacular names. None recorded.

Description. Whole upper plumage and exposed parts of wings rufous-brown; lower plumage ferruginous, browner on flanks, vent and under tail-coverts; tail faintly cross-rayed.

Measurements. Length about 250 to 260 mm.; wing about 96 to 104 mm.; tail about 115 to 120 mm.; tarsus about 32 mm.; culmen about 19 to 20 mm.

Colours of soft parts. Iris white, yellowish white or greenish white; bill orange-yellow, deepest on the basal half; legs and feet dull chrome-yellow, claws yellowish-horn; orbital skin and eyelid pale greenish yellow (*Legge*).

Distribution. Ceylon, throughout the damper portions.

Nidification. According to Legge this Babbler breeds in March, April and May, making a nest similar to that of *striatus* but very carefully concealed. Two eggs taken by Mr. MacVicar at

Bolgodole measure 24·1 × 18·0 mm. and 23·3 × 17·9 mm. Two taken for me by Mr. W. A. T. Kellow measure 24·2 × 18·1 mm. and 24·0 × 17·8 mm. They cannot be distinguished from those of *striatus*.

Habits. The Ceylonese Babbler seems to be a bird of the forest and jungle rather than a frequenter of village scrub and open country. Mr. W. Phillips informs me that it is not uncommon in the Matagama district but that it keeps much to forest.

(190) Turdoides cinereifrons.

The Ashy-headed Babbler.

Garrulax cinereifrons Blyth, J. A. S. B., xx, p. 176 (1851) (Ceylon).
Crateropus cinereifrons. Blanf. & Oates, i, p. 114.

Vernacular names. None recorded.

Description. Forehead, crown and sides of the head cinereous, shading off on the nape into the bright reddish brown which is the colour of the whole upper plumage, tail and visible portions of the wings, except the outer webs of the first few primaries which are paler; chin whitish; remainder of lower plumage rufous-brown, darker on the flanks and under tail-coverts.

Colours of soft parts. Iris white; eyelid plumbeous; bill black; inside of mouth greenish yellow; legs and feet plumbeous brown; claws dusky-horny (*Legge*).

Measurements. Length about? 250 to 260 mm.; wing 121 to 128 mm.; tail about 105 to 110 mm.; tarsus 38 mm.; culmen about 20 to 22 mm.

Distribution. Ceylon only, up to about 2,500 feet.

Nidification. Unknown.

Habits. This bird is a typical Babbler in its noisy, gregarious habits, but it is confined to dense forests where it is always damp and gloomy.

Genus ARGYA Lesson, 1831.

This genus differs from *Turdoides* in its longer tail and in its longer, more slender bill. The wing also is not so rounded, the third quill being longest or subequal with the fourth. The tail is longer and more graduated, the outermost feathers being about half the length of the central ones. *Argya longirostris* has a bill longer than the other species but is otherwise congeneric.

Key to Species and Subspecies.

A. Head and back distinctly streaked with blackish or very dark brown.
  a. Chin and throat rufous with dark shaft-stripes .... *A. earlii*, p. 197.

b. Chin and throat immaculate white or pale fulvous.
  a′. Lower plumage pale fulvous.
    a″. Above reddish brown .... *A. caudata caudata*, [p. 198.
    b″. Above more grey-brown .... *A. c. huttoni*, p. 199.
  b′. Lower plumage ferruginous........ *A. gularis*, p. 199.
B. Head not streaked, back with oval brown spots .... *A. malcolmi*, p. 200.
C. No streaks or spots on head or upper plumage.
  c. Chin and throat rufous, lores dark .... *A. subrufa*, p. 201.
  d. Chin, upper throat and lores white.... *A. longirostris*, p. 202.

(191) Argya earlii.

THE STRIATED BABBLER.

Malacocercus earlii Blyth, J. A. S. B., xvii, p. 369 (1844) (Calcutta).
Argya earlii. Blanf. & Oates, i, p. 105.

Vernacular names. *Barra-phenga* (Hindi).

Description. Upper plumage brown tinged with rufous, the feathers of the crown largely centred with very dark brown, those

Fig. 32.—Head of *A. earlii*.

of the back with very dark shaft-stripes; upper tail-coverts obsoletely dark-shafted; tail brown, the shafts darker and the feathers cross-rayed; wings brown, the lesser coverts dark-centred; lores grey; cheeks and ear-coverts plain rufescent; chin, throat and breast the same, the dark stripes increasing in size downwards; remainder of lower plumage pale buffy-brown, albescent in the middle of the abdomen.

Colours of soft parts. Iris bright yellow; eyelid plumbeous; bill fleshy-yellow, the culmen, nostril and tip darker horn-colour; mouth yellow; legs plumbeous or fleshy-plumbeous, claws pinkish.

Measurements. Length about 140 mm.; wing 85 to 93 mm.; tail about 120 to 130 mm.; culmen about 20 mm.; tarsus about 32 mm.

Distribution. From Sind to the Run of Cutch, along the base of the Himalayas to Behar, all over Behar and Bengal, East through Assam, North and South of the Brahmaputra, through Chittagong, Chin Hills and Arrakan to Pegu.

Nidification. Breeds principally during the rains but at different places at different times and in some, as in Assam and Bengal, at almost any time of the year. It prefers marshy land, where it makes its nest in the reeds, like that of a large Reed-Warbler, or it makes a larger, more untidy nest of grasses and reed-blades in a low bush or thicket of grass. The eggs are either three or four in number, of the usual bright, rather deep blue-green typical of the genus, in shape a rather broad oval with fine texture and considerable gloss. Sixty eggs average 22·8 × 17·6 mm.

Habits. This Babbler is a bird of wide grass-plains, marshy tracts and sub-montane grass-covered hills; wherever conditions are suitable it is sure to be abundant. It is very gregarious, according to Marshall, being found in flocks even in the breeding season. They are very noisy birds and have the same follow-my-leader style of clambering through grass and bushes and fluttering from one patch of cover to another as have the better-known species. On the other hand, probably on account of their semi-aquatic habits, they do not descend as much to the ground as do the other birds. They are chiefly insect feeders.

(192) Argya caudata caudata.

THE COMMON BABBLER.

Cossyphus caudatus Dumont, Dict. Sci. Nat., xxix, p. 266 (1823).
Argya caudata. Blanf. & Oates, i, p. 106.

Vernacular names. *Dumri* (Hindi in the South); *Huni* (Tam.); *Heddo* and *Lailo* (Sind); *Chil-chil* (Hind. in the N.W.P.); *Peng* or *Chota-penga* (Hindi); *Sor* (in the N.W.); *Chinna sida* (Tel.).

Description. Whole upper plumage fulvous-brown, each feather with a dark brown shaft-streak; wing and tail-coverts with only the shafts dark; quills brown, lighter on the outer webs; tail olive-brown, cross-rayed and the shafts very dark; chin and throat fulvous-white; lores brown; ear-coverts rufescent; lower plumage pale fulvous, albescent on the abdomen and the sides of the breast faintly streaked.

Colours of soft parts. Bill light brown, yellow at base below; legs and feet yellow; claws fleshy-brown; iris brown or yellow (*Bingham*); iris red-brown (*Jerdon*).

Measurements. Total length about 230 mm.; wing 78 to 84 mm.; tail about 120 to 125 mm.; tarsus about 28 mm.; culmen about 19 to 20 mm.

Distribution. Every portion of India proper, from Sind to E. Bengal and Calcutta; from the foot of the Himalayas to the Palni Hills; the Laccadives and in Rameswaram Island. Not Burma.

Nidification. This Babbler breeds practically throughout the year, certainly having two broods and sometimes possibly three.

The principal months are March to May before the rains break and again in July to September. The nest is a fairly neat cup made of grass, with roots, grass, bark and other fibrous material to a lesser extent mixed with it. There is either no lining or a very slight one of fine grass stems. It may be placed in almost any position low down; generally in a thorny bush, but also in cactus hedges, orange-trees, babools, tufts of grass, tangles of canes or vines, creepers over trellis-work or any similar site. It measures roughly about 5″ × 2½″ externally by about 3″ × 2″, or rather less, inside. The eggs number three or four, in South India sometimes only two. They are of the typical dark glossy-blue colour common to the genus, in shape broad, blunt ovals, whilst the average of 200 eggs is 21·2 × 16·1 mm.

Habits. In the North of India this is one of the most common and familiar of birds, entering and breeding in compounds and all round about villages, but it is found wherever there is open country with sufficient cover in the way of bushes, hedges and scrub. It does not haunt forests, but is often found in high grass-covered plains when they are dry. In the South of India it is said to be less confiding in its habits and rather to shun the vicinity of human beings. Its flight and manners generally are similar to those of the last bird, but it is less noisy. Its voice is described by Jerdon as a "low, undertoned warbling whistle" and it also has a constant soft chattering.

(193) Argya caudata huttoni.

THE AFGHAN BABBLER.

Malacocercus huttoni Blyth, J. A. S. B., xvi, p. 476 (1847) (Candahar).

Vernacular names. None recorded.

Description. Similar to the last bird but much paler and greyer, the central marks less defined and not so dark. It is also a trifle larger.

Colours of soft parts as in the last bird.

Measurements. Wing 83 to 95 mm.; tail 125 to 135 mm.

Distribution. Afghanistan, Baluchistan and S.E. Persia. A specimen from "the Jay River Hills," Sind, is a very typical example of this race, but other specimens from the plains of Sind are true *caudata*. I cannot separate Hume's *eclipes*.

Nidification and **Habits** do not appear to differ from those of the Indian bird.

(194) Argya gularis.

THE WHITE-THROATED BABBLER.

Chatarrhœa gularis, Blyth, J. A. S. B., xxiv, p. 478 (1855) (E. side of Bay of Bengal).
Argya gularis. Blanf. & Oates, i, p. 107.

Vernacular names. *Zay-we* (Burmese).

Description. Forehead and short line to the eye grey with black streaks; crown to back and scapulars ruddy brown, with dark shaft-stripes; rump and upper tail-coverts olive-brown, the latter with faint stripes; tail olive-brown, cross-rayed; exposed parts of wing olive-brown, some of the greater coverts indistinctly dark-shafted; ear-coverts and sides of the neck ruddy brown; lores black; chin, throat, cheeks and upper breast white; remainder of lower plumage ferruginous.

Colours of soft parts. Iris yellow or reddish brown; legs and feet dark yellow; bill pale yellow-horny, culmen and tip dark horny-brown.

Measurements. Length about 260 mm.; wing 78 to 83 mm.; tail about 140 mm.; tarsus about 35 mm.; culmen about 19 to 20 mm.

Distribution. The dry zone of Central, North and South Burma.

Nidification. That of the rest of the genus. The full clutch seems to be four though often only three eggs are laid. Mr. Mackenzie gives me the measurements of 60 eggs as follows:—average 22·6 × 17·1 mm.: maxima 24·7 × 17·2 and 23·5 × 18·2 mm.; minima 20·6 × 17·0 and 22·0 × 16·0 mm. The breeding season is from early April to late May.

Habits. "The Zay-we is one of the most familiar birds of Mandalay and the dry zone generally, haunting both compounds and jungle, and goes by the names of the 'seven sisters' or 'rat-birds.' There is no mistaking them with their untidy dress, dirty white shirt fronts and long, ragged tails. They cannot be exactly called '*Laughing*-Thrushes' as they seem never happy, but always complaining with their harsh, grating voices. They go about together in parties, and generally seem very busy as they hop about with tails held at different angles, hunting and turning over the fallen leaves. When they have to fly, which they always seem loth to do, they go in for a regular rocketing flight, with their small, round wings extended and their tails spread out in fans." (*H. H. Harington.*)

(195) Argya malcolmi.

THE LARGE GREY BABBLER.

Timalia malcolmi Sykes, P. Z. S., 1832, p. 88 (Dukhun).
Argya malcolmi. Blanf. & Oates, i, p. 108.

Vernacular names. *Ghogoi* (Hind.); *Gangai* (Hind. in N.W.P.); *Gongya* (Can.); *Kokatti* (Mahr.); *Verri-chinda* and *Gowa-sida* (Tel.); *Bhaina* (Lucknow).

Description. Upper plumage dull brown, the feathers of the mantle with dark centres; forehead bluish grey with fine white shaft-streaks; lores dusky; ear-coverts brown with pale shafts; the three outer pairs of tail-feathers white, the fourth pair with

the outer webs whitish, the others pale brown, the central one cross-rayed; wings dark brown, the earlier primaries horny-brown on the outer webs, the others edged with the colours of the back; entire lower plumage, cheeks and sides of neck fulvescent, the throat and breast darker and washed with glaucous.

Colours of soft parts. Iris bright yellow; upper mandible dark brown; lower mandible, legs and feet fleshy or fleshy-yellow, sometimes tinged with bluish.

Measurements. Length about 280 mm.; wing about 112 to 119 mm.; tail about 135 to 145 mm.; tarsus about 30 mm.; culmen about 19 mm.

Distribution. The greater portion of the peninsula of India, South to the Nilgiris and Mysore, common in Central West India and rare in the North-West. To the East it is found as far as Allahabad, and further South I have had specimens sent me from Surguja.

Nidification. These birds breed more or less throughout the year, but possibly more regularly in the early rains. The nest cannot be distinguished from that of *Turdoides terricolor* and may be placed in a bush, cactus hedge or mango-tree, often at considerable heights from the ground. The eggs are usually four in number, of the usual shape, colour and texture and one hundred average 25·2 × 19·4 mm.

Habits. Like the Common Babbler this bird frequents both the wilder and more jungly tracts, where it is a wild, shy bird, and the vicinity of towns, villages and houses, where it is as tame and confiding as it is possible to be. It is very gregarious, keeping in parties even during the breeding season and whatever is the business of one bird is the interest of the whole party. If one member is attacked by hawk, snake or other enemy the rest of the flock combine to attack and not infrequently will succeed in driving it off. It is very noisy and very excitable like the Jungle-Babbler and, like that bird, active on its legs, feeble on its wings. They eat both insects, seeds and fruit but principally the first.

(196) Argya subrufa.

The Rufous Babbler.

Timalia subrufa Jerdon, Madr. Journ. L. S., p. 259 (1844) (Wynaad).
Argya subrufa. Blanf. & Oates, i, p. 109.

Vernacular names. *Jungli-Khyr* (Hind.).

Description. Forehead deep grey with black shafts; whole upper plumage, tail and exposed portions of the wings olive-brown with a rufous tinge, especially strong on the outer edge of

the quills, the tail and upper tail-coverts; lores brown; cheeks, sides of head and neck olive-brown tinged with rufous; lower plumage bright rufous, paler on the abdomen and suffused with brown on the thighs and under tail-coverts; under wing-coverts and edge of wing rufous; tail slightly cross-rayed.

Colours of soft parts. Iris creamy-white to bright yellow; bill yellow or pale yellowish-horny, the culmen and tip dark brown; legs and feet dark fleshy-yellow, yellowish brown, reddish brown and yellowish grey.

Measurements. Length 250 to 260 mm.; wing 87 to 90 mm.; tail about 110 to 115 mm.; tarsus about 33 mm.; culmen about 18 to 19 mm.

Distribution. The Western Ghats from Coonoor and Kotagiri on the Nilgiris to Khandala near Bombay.

Nidification. The Rufous Babbler makes a nest of leaves, grass and creeper stems lined with fine grass stems, which it places in a bush or tree standing in forest. The eggs seem to be usually three in number, sometimes only two, sometimes four. They are of the typical glossy, rather dark blue and measure about 24·2 × 18·5 mm. The breeding season is February and March.

Habits. Except that it keeps much to jungle and bamboo cover away from the haunts of men, the habits of this bird are quite typical of the genus. Its voice is said to be softer and more musical than that of the common forms, but it is almost equally noisy and active.

(197) Argya longirostris.

The Slender-billed Babbler.

Pyctorhis longirostris (Hodgs.), Moore, P. Z. S., 1854, p. 104 (Nepal).
Argya longirostris. Blanf. & Oates, i, p. 108.

Vernacular names. *Dao-ling titri* (Cachari).

Description. Upper plumage, tail and exposed parts of wings deep reddish brown; lores, cheeks, chin and upper throat white; the whole lower plumage and the ear-coverts ferruginous, becoming albescent on the abdomen; tail cross-rayed.

Colours of soft parts. Iris white or bluish white; bill black; legs and feet dark brown.

Measurements. Length about 240 mm.; wing 75 to 79 mm.; tail about 115 to 120 mm.; tarsus about 30 mm.; culmen about 18 to 19 mm.

At first sight this bird with its more slender, curved, black bill looks as if it should be put in a genus separate from the Common Babbler with its shorter bill of almost bright yellow. Its somewhat spiny-shafted feathers of the forehead are also a feature

which differentiates it from *caudata*; but their differences are bridged over by the Large Rufous Babbler, which has an intermediate shaped bill which is partly black and has the feathers of the forehead with the shafts distinctly stiff and bare at the tips. Blyth placed both *subrufa* and *longirostris* in a separate genus, *Layardia*, but in view of the gradation in degree in the characteristics defining them, I keep them altogether under *Argya*.

Distribution. The Nepal Terai, Bhutan and Buxa Duars, the Terai at the foot of the Himalayas, North of the Brahmaputra to Sadiya and the grass plateaus of the hills South of that river to Manipur and Chittagong.

Nidification. This Babbler breeds not uncommonly on the grass plateaus in the Khasia Hills during May and June, making a cup-shaped nest of grass, lined with grass stems and placed in amongst grass or reeds, a bush or tangle of brambles, or even on an old stump or a broken-down wall or bank. The eggs number three or four, but are a rather paler blue than are the eggs of most of those of the genera *Argya* or *Turdoides* though quite similar in shape and texture. Twenty-one eggs average about 21·5 × 16·7 mm.

Habits. These are of the gregarious, noisy and restless nature of the rest of the group. Hume, in Manipur, and myself, in the Khasia Hills, found them nearly always in the long grass covering wide extents of hill and valley, where they fed both on the ground and on the grass and reeds. Several of their notes were quite pleasant, but the majority were of the discordant character common to all these Babblers.

Genus **ACANTHOPTILA** Blyth, 1855.

The genus *Acanthoptila* was instituted by Blyth for a remarkable bird discovered many years previously, characterized by its spinous plumage and long, graduated tail. Sharpe originally placed this genus in his *Crateropodinæ* but Oates, in the Avifauna, removed it to the *Sylviidæ*. It has two phases of coloration, in one of which the lower part of the head becomes partially white. Oates considered the change to be a seasonal one, but there is nothing in the British Museum series to show this and I consider it is the plumage of the older bird. This acquisition of white is found in other *Timaliine* birds such as *Gampsorhynchus* and *Gypsophila*. In its general appearance it is very close to *Babax* and *Argya*. The feathers of the upper plumage and breast have stiff shafts which become very spinous when worn; the bill is nearly as long as the head and gently curved; the nostrils are long, lunar-shaped slits; the rictal bristles short and weak; the wing rounded and 4th primary longest; tail graduated and much longer than wing, and the tarsus very strong and about one-third the length of wing.

(198) Acanthoptila nipalensis.

THE SPINY BABBLER.

Timalia nipalensis Hodgs., As. Res., xix, p. 182 (1836) (Nepal).
Acanthoptila nepalensis. Blanf. & Oates, i, p. 386.

Vernacular names. None recorded.

Description. The whole upper plumage, tail and visible portions of the wings rich olive-brown, the feathers of the head and back with stiff, black shafts; tail cross-rayed darker; lores and the feathers behind and below the eyes whitish; ear-coverts brown, mixed with white; lower plumage rufescent, each feather with a dark brown shaft-stripe, these increasing in size on breast and abdomen; under tail-coverts and flanks plain rufescent brown.

Fig. 33.—Head of *A. nipalensis.*

Some birds, including specimens killed in summer, have the lower part of head, chin and throat white with glistening shafts, and the lower plumage is paler. According to Oates this is the summer plumage, but there is too little evidence at present either to confirm or refute this suggestion.

Colours of soft parts. Bill dusky brown; legs dull fleshy-brown; iris smoky-brown (*Hodgson, MS.*).

Measurements. Length about 250 to 260 mm.; tail about 125 to 130 mm.; wing 85 to 90 mm.; tarsus about 30 mm.; culmen about 18 to 19 mm.

Distribution. Nepal and Sikkim and ? N.W. Himalayas.

Nidification. According to Hodgson this Babbler makes a loose, shallow grass nest, about 5″ in diameter by about 2″ deep, which it places in a fork of a tree. The eggs are said to be verditer-blue and to measure about 25 × 16·5 mm. Eggs in my own collection reputed to be of this bird are quite different and in type more like those of *Megalurus*. The ground is white and they are profusely speckled and spotted with brown and underlying spots of pale neutral tint on purplish lavender. They measure about 22 × 17 mm. Their identification is not satisfactory and more information is very badly required about the bird and its life-history.

Habits. Hodgson says that this bird is solitary, tenants low

bushes, flies very badly and unwillingly, and that it feeds entirely on the ground. He also says that it is found by bushy rills and is a shy, skulking bird. On the label of a Pinwill specimen is a remark that this bird is a fine songster.

Genus **POMATORHINUS** Horsf., 1821.

In this genus the principal distinguishing feature is the long, slender bill, either as long as, or longer than, the head, much curved downwards and *always compressed.* The nostril is bare and exposed, whilst the feathers of the forehead are short, rounded and close. The tail is longer than the wing and much graduated, the outer feathers never exceeding three-quarters the length of the central pair.

The young of the genus generally have more rufous or dark colour on the breast and abdomen than the adults. The bill is not fully grown for some months.

Key to Species.

A. With a white supercilium.	
a. Bill comparatively short, about equal to head.	
a'. Breast, throat and abdomen white.	
a''. Sides of neck chestnut, contrasting with upper plumage.	
a'''. Chestnut of neck produced as a band down flanks.	
a^1. Chestnut band streaked with white	*P. schisticeps*, p. 205.
b^1. Band not streaked	*P. nuchalis*, p. 208.
b'''. Chestnut confined to neck	*P. olivaceus*, p. 209.
b''. Sides of neck not chestnut	*P. horsfieldi*, p. 210.
b'. Throat white; breast ferruginous, not striped	*P. ferruginosus*, p. 213.
c'. Throat white; breast striped with olive-brown	*P. ruficollis*, p. 216.
b. Bill more slender and about half as long again as head	*P. ochraceiceps*, p. 217.
B. No white supercilium.	
c. Bill not longer than head and slender	*P. erythrogenys*, p. 219.
d. Bill longer than head and very coarse....	*P. hypoleucus*, p. 222.

Pomatorhinus schisticeps.

Key to Subspecies.

A. Chestnut band deep maroon-chestnut.	
a. Wing over 4 inches.	
a'. Darker and more olivaceous above ..	*P. s. schisticeps*, p. 206.
b'. Paler and more rufous above	*P. s. cryptanthus*, p. 207.
b. Wing under 4 inches..................	*P. s. pinwilli*, p. 208.
B. Chestnut band much paler	*P. s. mearsi*, p. 207.

(199) Pomatorhinus schisticeps schisticeps.

THE SLATY-HEADED SCIMITAR-BABBLER.

Pomatorhinus schisticeps Hodgs., As. Res., xix, p. 181 (1836) (Nepal); Blanf. & Oates, i, p. 116.

Vernacular names. *Pabdoa* (Beng.); *Phoyeum-pho* or *Phurreeam-pho* (Lepcha); *Bhiakuroh* (Parbuttiah).

Description. Forehead to nape dark slate, the shafts darker; upper plumage and wing-coverts rufescent olive-brown; a bold supercilium from nostrils to nape white; lores and ear-coverts black; a large patch on the sides of the neck extending to sides of breast and abdomen rich maroon-chestnut, streaked with white except on the neck; flanks, vent and under tail-coverts dusky olive-brown; remainder of under parts from chin white.

Fig. 34.—Head of *P. s. schisticeps.*

Colours of soft parts. Iris pale yellow, pale reddish yellow or pale creamy; pale glaucous-brown in young birds; bill pale dull yellow, the base of the upper mandible blackish; legs slaty, claws horny and soles yellowish.

Measurements. Length about 270 mm.; wing about 98 to 106 mm.; tail about 115 to 120 mm.; tarsus about 32 mm.; culmen about 27 mm.

Distribution. Nepal, Sikkim and hills North of the Brahmaputra; how far East is not known exactly at present, but Stevens found it common in N. Lakhimpur.

Nidification. This Scimitar-Babbler breeds freely from the foot-hills of the Himalayas up to at least 5,000 feet, but is most common between 1,500 and 2,500 feet. It makes a nest of grass, leaves and fibrous material, either cup-shaped or with the materials produced so as to make it domed though the top is so fragile that it often collapses and appears to be only part of an ill-made shallow saucer. The eggs are three or four in number, pure white, as with all Scimitar-Babblers, fragile for their size, sometimes highly glossed, sometimes almost or quite glossless, generally a distinctly pointed oval, and they measure about 26·4 × 18·0 mm. The breeding season is April, May and June.

Habits. The Slaty-headed Scimitar-Babbler is a sociable, noisy bird but its notes when disturbed or alarmed are very mellow and musical and during the breeding season, when the flocks break up into pairs, it has a low, musical "hoot-hoot," which the

two birds constantly utter as they wander about hunting for food. They keep much to low jungle, secondary growth and bamboo-jungle and also feed on the ground, turning over the leaves and rubbish just as the true Laughing-Thrushes do.

(200) Pomatorhinus schisticeps cryptanthus.

COLTART'S SCIMITAR-BABBLER.

Pomatorhinus schisticeps cryptanthus Hartert, Bull. B. O. C., xxxvi, p. 35 (1915) (Margherita, Assam).

Vernacular names. *Dao buku-galao* (Cachari).

Description. Differs from the last in having the upper parts less olive and more rufescent, the red of the neck and flanks a brighter, lighter chestnut and, according to Hartert, it is a trifle smaller.

Colours of soft parts. As in the last bird; the iris is often a golden yellow.

Measurements. A little smaller than *schisticeps*; wing 94 to 102 mm.

Distribution. Hills South of the Brahmaputra from the Mikir Hills and Cachar to Margherita.

Nidification similar to that of *P. s. schisticeps*, breeding from about 2,000 feet upwards to at least 5,000 feet but principally about 4,000 feet. It builds its nest often in bamboo-jungle and also in scrub, edges of cultivation and in forest, especially when there are open glades and streams with grassy banks. The eggs number three or four, very rarely five and sixty eggs average about 26·6 × 19·2 mm. The breeding season lasts from the end of April to late July.

Habits. Those of the last bird; this race, however, is *not* a noisy bird and, unless alarmed or excited over some special find, one seldom hears more than a secret low, chuckling note and the usual call of "hoot-hoot-hoot." It is, of course, a poor flyer like all the Scimitar-Babblers but I should not call it a skulker as it often feeds practically in the open bamboo-jungles, where it is very easy to watch it. It can hop at a great pace, proceeding in long bounds and when so engaged might easily be mistaken for a frightened rat. Its food is principally insectivorous, but possibly it also eats grain and seeds.

(201) Pomatorhinus schisticeps mearsi.

GRANT'S SLATY-HEADED SCIMITAR-BABBLER.

Pomatorhinus mearsi Ogilvie-Grant, Bull. B. O. C., xv, p. 35 (1905) (Taungdwin).

Vernacular names. None recorded.

Description. This race has the chestnut still paler than in

cryptanthus, and the edges to the primaries are also paler than they are in that bird. The rufous collar is often very pronounced in this race.

Colours of soft parts as in the other races.

Measurements. The largest of the Slaty-headed Scimitar-Babblers; wing from 100 to 110 mm. and other measurements in proportion.

Distribution. Western Burma, Chin Hills and Arrakan.

Nidification. Like that of the last two birds. Two eggs taken by Mr. J. M. D. Mackenzie in the Chin Hills and four sent me from Arrakan measure about 26 × 19·7 mm.

Habits. Those of the species. Appears to be found from the lowest hills up to about 4,000 feet.

(202) Pomatorhinus schisticeps pinwilli.

SHARPE'S SLATY-HEADED SCIMITAR-BABBLER.

Pomatorhinus pinwilli Sharpe, Cat. B. M., vii, p. 413 (1883) (Simla).

Vernacular names. None recorded.

Description. A small race of *schisticeps*, similar in colour but with the chestnut a trifle less deep in colour and with the rufous collar on the nape more pronounced.

Colours of soft parts as in *P. s. schisticeps*.

Measurements. A small bird; wing from 85 to 95 mm., generally about 90 to 91 mm.

Distribution. N.W. Himalayas to Garhwal.

Nidification and **Habits** similar to those of the other races.

(203) Pomatorhinus nuchalis.

TWEEDDALE'S SCIMITAR-BABBLER.

Pomatorhinus nuchalis Tweeddale, A. M. N. H., (4) xx, p. 535 (1877) (Thayetmyo); Blanf. & Oates, i, p. 117.

Vernacular names. None recorded.

Description. Resembles a small *P. schisticeps*, but has the rufous of the neck and sides unstreaked with white. The rufous nuchal collar is also more developed.

Colours of soft parts. Iris pale to golden yellow; eyelid and ocular region pale lavender; bill orange-yellow, only the base and gape dusky; inside of mouth flesh-colour; legs dusky plumbeous; claws horny-brown.

Measurements. Length about 225 to 235 mm.; wing 87 to 91 mm.; tail about 210 to 220 mm.; tarsus about 30 mm.; culmen about 25 mm.

Distribution. Eastern Burma, east of the Sittaung from Papun in the South to the Northern Shan States. Mackenzie found it not rare at Prome.

Nidification. The nest, which has been taken by Col. Harington and J. P. Cook, is similar to that of other Scimitar-Babblers. The eggs appear to number two or three only. Twelve eggs measure about 25·0 × 18·2 mm.

Habits. According to Harington the bird haunts the thickest of cover, whether bamboo or other. It is found from some 2,000 to 6,500 feet or higher.

Pomatorhinus olivaceus.

Key to Subspecies.

A. Upper parts rufous-brown .... *P. o. olivaceus*, p. 209.
B. Upper parts olive-brown .... *P. o. ripponi*, p. 210.

(204) Pomatorhinus olivaceus olivaceus.

THE TENASSERIM SCIMITAR-BABBLER.

Pomatorhinus olivaceus Blyth, J. A. S. B., xvi, p. 451 (1847) (Tenasserim); Blanf. & Oates. i, p. 118.

Vernacular names. None recorded.

Description. Differs from the *schisticeps* group in having no chestnut band down the sides of the breast and flanks, the chestnut being confined to the sides of the neck. The rufous collar on the nape is not very pronounced.

Colours of soft parts. Iris bright yellow; bill deep yellow, dusky-green at base above; legs and feet plumbeous; claws horny (*Hume & Davison*).

Measurements. Length about 230 mm.; wing 90 to 96 mm.; tail about 100 to 106 mm.; tarsus about 30 mm.; culmen about 27 to 28 mm.

Distribution. Tenasserim, from Moulmein down to its extreme southern point and thence extending into the Malay Peninsula.

Nidification. Breeds in Tenasserim from January to March, making the usual Scimitar-Babbler's nest, either globular or cup-shaped, on the ground in thick jungle. The eggs, either two or three in number, average about 25·4 × 18·5 mm.

Habits. Oates writes: "They live on the ground or in shrubs very close to the ground, only very occasionally mounting trees. They conceal themselves so well that they are very seldom seen, but when seen they perform fantastic motions, spreading out the tail and drooping the wings. They have a variety of calls which resolve themselves, however, into variations of the words 'hoot-hoot-hoot' constantly repeated. They frequent the very thickest pieces of jungle, not only where the bushes themselves are thick, but where the low undergrowth is entangled and intricate."

(205) Pomatorhinus olivaceus ripponi.

HARINGTON'S SHAN SCIMITAR-BABBLER.

Pomatorhinus ripponi Harington, Bull. B. O. C., xvii, p. 9 (1910) (Shan States).

Vernacular names. None recorded.

Description. Differs from the Tenasserim Scimitar-Babbler in having the colour of the upper parts olive-brown instead of rufous-brown; the tail is concolorous with, instead of darker than, the back; the chestnut neck-patch is paler and the bill is perhaps more slender.

Colours of soft parts as in *P. o. olivaceus.*

Measurements. Total length about 210 mm.; wing 85 to 88 mm.; tail about 95 to 98 mm.; tarsus 25 mm.; culmen about 27 to 28 mm.

Distribution. Shan States and Kachin Hills.

Nidification similar to that of the last bird. Eggs taken by Messrs. J. P. Cook and Mackenzie average about 25·0 × 17·9 mm.

Habits. This bird was found by Mr. Cook frequenting grass lands rather than forest or jungle, and he even obtained it breeding in such places. It is found at all elevations between 2,500 and 5,000 feet.

Pomatorhinus horsfieldi.

Key to Subspecies.

A. Sides of neck and breast blackish brown. .	*P. h. horsfieldi,* p. 210.
B. Sides of neck and breast brown.	*P. h. obscurus,* p. 211.
C. Sides of neck rufescent like the back . .	*P. h. melanurus,* p. 212.
D. Sides of neck and breast broadly deep black	*P. h. travancoriensis,* [p. 211.

(206) Pomatorhinus horsfieldi horsfieldi.

THE DECCAN SCIMITAR-BABBLER.

Pomatorhinus horsfieldi Sykes, P. Z. S. 1832, p. 39 (Deccan); Blanf. & Oates, i, p. 119.

Vernacular names. *Namala Pitta* or *Dasari Pitta* (Tel.).

Description. Upper plumage dark earthy-brown with a tinge of rufous, the head slightly darker; a white supercilium from the nostril to the nape, edged with black above; chin, throat, breast and abdomen white; lores, under the eye, the ear-coverts, the sides of the neck and a band bordering the breast and abdomen blackish brown; sides of the body, vent and under tail-coverts slaty-brown; tail and wings dark brown, washed on the outer webs with the colour of the back.

Colours of soft parts. Iris brown, maroon-brown or crimson; legs and feet greenish plumbeous; bill yellow, dusky at base of lower mandible.

Measurements. Length about 250 to 260 mm.; wing about 100 to 105 mm.; tail about 105 to 108 mm.; tarsus about 32 mm.; culmen about 25 mm.

Distribution. Bombay, Mahabaleshwar, Khandalla, Kanara and the plains of Mysore, Madras and the Deccan.

Nidification. This Scimitar-Babbler breeds from January to May in broken country and low hills up to about 2,000 feet as well as in the actual plains, making the usual grass, domed nest, which it places on the ground in grass and bushes, or in forest. The eggs apparently sometimes number as many as five, but two or three are the normal clutch. Twenty-four eggs average 26·6 × 18·3 mm.

Habits. Those of the genus. This is a subspecies of the low country, it being represented by other races in the higher hills.

(207) Pomatorhinus horsfieldi obscurus.

HUME'S SCIMITAR-BABBLER.

Pomatorhinus obscurus Hume, S. F., i, p. 7 (1873) (Mt. Abu); Blanf. & Oates, i, p. 120.

Vernacular names. *Namala Pitta* or *Dasari Pitta* (Tel.).

Description. A much paler bird than the last, with no black band separating the white of the breast from the upper plumage, the sides of the neck and breast being practically the same colour as the back.

Colours of soft parts and **Measurements** as in true *horsfieldi*.

Distribution. So far only recorded from Mt. Abu and Seoni.

Nidification. Similar to that of the other races. Five eggs sent me from Mt. Abu measure about 23·0 × 17·5 mm.

Habits as in the last, but perhaps does not frequent such dense jungles. Its range of elevation still requires to be carefully worked out together with its full distribution. Butler says that it is not gregarious, but goes about either singly or in pairs.

(208) Pomatorhinus horsfieldi travancoriensis.

THE SOUTHERN INDIAN SCIMITAR-BABBLER.

Pomatorhinus horsfieldi travancoriensis Harington, J. B. N. H. S., xxiii, p. 333 (1914) (Travancore).

Vernacular names. *Namala pitta* (Tel.).

Description. Much darker than typical *horsfieldi*; back a rich olive-brown, head decidedly darker than back and often blotched with black. White of breast and abdomen divided from brown of

upper parts by a broad black band. Tail often nearly black at the end.

Colours of soft parts and Measurements as in *horsfieldi*.

Distribution. Practically the whole of S. India, South of the range of *P. h. horsfieldi*, wherever there are hills and mountains.

Nidification. This bird breeds in great numbers in the Nilgiris and commonly in many other places between 2,000 and 8,000 feet. It makes the usual globular nest of grass, more or less mixed with leaves, bracken and roots, very flimsily put together and placed either on the ground or low down in some bush. Many authors describe the full clutch as four or five, but over the greater part of its range two or three is probably the normal number. They are, of course, the usual pure white, and ten eggs average about 26·5 × 19·7 mm. They breed in December to March on the West Coast but during March, April and May in the Nilgiris and higher hills.

Habits. A gregarious bird, going about in parties from half-a-dozen to a dozen or more, working through the low bushes, or on the ground under them, for insects. They employ a variety of soft, rather musical notes, bursting into a chorus of abuse and loud language when frightened or annoyed. Their call-note is the usual *hoot hoot* of the family.

(209) Pomatorhinus horsfieldi melanurus.

THE CEYLON SCIMITAR-BABBLER.

Pomatorhinus melanurus Blyth, J. A. S. B., xvi, p. 481 (1847) (Ceylon); Blanf. & Oates, i, p. 118.

Vernacular names. None recorded.

Description. Similar to *horsfieldi horsfieldi* but with no demarcations between the plumage of the upper parts and the sides of the breast and neck, the latter being of the same ferruginous brown as the former; the tail is very dark marked with ferruginous at the base.

Colours of soft parts. Iris reddish brown to dull red; orbital skin and eyelid dull blue; bill pale to dark yellow, blackish on the base; legs and feet slaty or greenish plumbeous; feet generally more bluish than tarsi, claws dusky-horny.

Measurements. Length about 210 to 215 mm.; wing about 86 to 94 mm.; tail about 95 mm.; tarsus about 30 mm.; culmen about 25 to 26 mm.

Distribution. Ceylon only.

The description given above is for the individuals obtained in the South, where heat and humidity are at their greatest. Birds obtained on the Horton Plains and at the highest altitudes are more olive than rufous and paler, less rich, in coloration throughout. I cannot, however, on the material available define the habitat of either form, and therefore refrain from naming another new race.

Nidification. Breeds in the months November to March, making a typical Scimitar-Babbler's nest and laying two or three pure white eggs, indistinguishable from those of other species. It is noticeable that the eggs of Southern Scimitar-Babblers are more regularly elliptical and less pointed oval in shape than are those of Northern birds, but every variation is to be found in both. Two eggs of the present bird measure 23·0 × 17·8 mm.

Habits. These Babblers associate either in pairs or small flocks, haunting any class of thick cover and working both the ground, bushes and the lower branches of trees for food. Legge describes their habit of indulging in dances and gesticulations, if such a term may be applied to birds. Their voice, flight and general habits are similar to those of the Indian species.

Pomatorhinus ferruginosus.

Key to Subspecies.

A. Crown of head nearly black, much darker than back .... *P. f. ferruginosus*, p. 213.
B. Crown of head olive-brown or practically concolorous with back.
  a. Breast bright ferruginous .... *P. f. phayrei*, p. 214.
  b. Breast pale ferruginous buff .... *P. f. albigularis*, p. 215.
  c. Breast buffy white or very pale buff.... *P. f. mariæ*, p. 215.

(210) Pomatorhinus ferruginosus ferruginosus.

THE CORAL-BILLED SCIMITAR-BABBLER.

Pomatorhinus ferruginosus Blyth, J. A. S. B., xiv, p. 597 (1845) (Darjeeling); Blanf. & Oates, i, p. 120.

Vernacular names. *Piong-kohut* or *Poniong-hut* (Lepcha); *Bhotetet* (Bhut.); *Peet-gongor* (Daphla).

Description. Forehead rufous; crown, nape, lores, upper cheeks and ear-coverts black; a broad supercilium to the nape, chin and lower cheeks white; upper plumage, tail and visible portions of closed wing olive-brown, tinged with rufous; chin and throat white; breast and centre of abdomen bright ferruginous; remainder of plumage olive-brown.

Colours of soft parts. Iris yellow or golden yellow; bill deep coral-red; legs light yellowish brown, sometimes with a greenish or leaden tint.

Measurements. Length about 220 mm.; wing 90 to 95 mm.; tail about 110 mm.; tarsus about 30 mm.; culmen about 27 to 28 mm.

Distribution. Himalayas from Nepal to the extreme east of Assam, North of the Brahmaputra.

Nidification. Breeds in Sikkim from the end of April to the end of June, making a globular nest of grass and bamboo leaves, sometimes lined with finer grass, but generally unlined. The nest is placed either on, or quite close to, the ground, generally in dense undergrowth, less often in bamboo or thinner jungle. The eggs, either three or four in number, according to Hodgson sometimes five, are the usual pure white, and twenty eggs average about 23·5 × 17·7 mm.

Habits. This bird is generally found at considerable heights from 4,000 feet up to at least 6,000 feet, seldom breeding below the former. Its habits differ in no way from those of the better known *phayrei*.

(211) Pomatorhinus ferruginosus phayrei.

PHAYRE'S CORAL-BILLED SCIMITAR-BABBLER.

Pomatorhinus phayrei Blyth, J. A. S. B., xvi, p. 462 (1847) (Arrakan); Blanf. & Oates, i, p. 121.

Vernacular names. *Dao-buku-gajao* (Cachari); *Inrui-gojo* (Kacha Naga).

Description. Similar to the last, but the upper plumage olive-brown with no rufous tinge; above the white supercilium there is a trace of a black line; the under parts are much more rufous. The crown is practically concolorous with the back.

Colours of soft parts and **Measurements** as in *ferruginosus*.

Distribution. Hills South of the Brahmaputra, Chin Hills and Arrakan Yomas.

Nidification. Breeds in considerable numbers in the Khasia and N. Cachar Hills between 3,000 and 5,000 feet, most commonly at 3,000 to 3,500 feet. The nest is the usual football-shaped affair, lying on its side, very loosely and untidily made, principally of bamboo leaves and bracken, more or less mixed with grass, roots and a few leaves. In most nests there is no true lining but, in a few, fine grass is used for this purpose. The entrance, which may be anything up to 4″ wide, is at one end low down and the ends of the materials stick out all round, half hiding it from sight. The nest is sometimes placed on the ground, but far more often in bushes some feet above it, and I have taken one nest which lay on the top of a bush about 7 feet up, easily visible from the hill-path above but looking like a mass of rubbish blown together by the wind against a jutting branch. Three is the number of eggs most often laid, sometimes four, frequently two only. Fifty eggs average 27·1 × 19·1 mm. The breeding season lasts from May to July but I have seen nests with eggs both in April and late August.

Habits. Phayre's Scimitar-Babbler is a bird of thick forest and dense undergrowth, found but little in bamboo-jungle and still less in the grass-covered hills, except in the mornings and evenings

POMATORHINUS F. PHAYRII.
Phayre's Scimitar Babbler.
2/3 life size.

when feeding. It is to be met with both in pairs and in small parties, silent as a rule but occasionally bursting into a chorus of rather sweet, full notes when anything of special interest is seen or if suddenly disturbed. They slink about in a very rat-like manner on the ground under the bushes but move from one piece of cover to another in big bounds, only taking to wing when actually forced to do so. They fly much like the Laughing-Thrushes, alternate sailings and furious flappings, tail bent up or down and wide-spread and legs carried well forward and down unless the flight is prolonged. They are not shy birds and are very inquisitive and cannot resist a closer acquaintance with any novel sight or sound. I have seen these birds mobbing a civet cat much as the birds of the genera *Turdoides* and *Argya* will mob a village cat which invades their territory.

(212) Pomatorhinus ferruginosus albigularis.

BLYTH'S SCIMITAR-BABBLER.

Pomatorhinus albigularis Blyth, J. A. S. B., xxiv, p. 274 (1855) (Muleyit Mt.); Blanf. & Oates, i. p. 121.

Vernacular names. None recorded.

Description. Similar to the Coral-billed Scimitar-Babbler, but the crown is very little darker than the back. A black line extends above the white supercilium. The breast and abdomen are a very pale ferruginous, or pale buff with a faint rufous tinge.

Colours of soft parts. Iris creamy-white to bright yellow; legs and feet pale greenish or yellowish brown; bill deep vermilion or coral-red.

Measurements. A rather larger bird than *phayrei*, with shorter bill; wing about 95 to 100 mm.; bill about 24 to 25 mm.

Distribution. Mountains of Tenasserim South to Tavoy and North to Karen Hills.

Nidification. Mr. K. Macdonald found it breeding on the Taok plateau 60 miles east of Prome. The nest was of the usual type, and the eggs, two or three in number, measured about 24·6 × 18·4 mm.

Habits similar to those of the other races.

(213) Pomatorhinus ferruginosus mariæ.

WALDEN'S SCIMITAR-BABBLER.

Pomatorhinus mariæ Walden, A. M. N. H., xv, p. 403 (1875) (Tounghoo Hills).

Vernacular names. None recorded.

Description. This is a pale form of *albigularis*, and the under parts are very pale buff with no tinge of rufous.

Colours of soft parts and **Measurements** as in the last bird.

Distribution. Toungoo and Karen Hills, Yamethen, Upper Burma.

Nidification and **Habits.** Nothing recorded.

This and the last bird are undoubtedly only races of *P. ferruginosus*, although the extremes of difference between birds from Nepal and birds from the Karen Hills are very great.

Pomatorhinus ruficollis.

Key to Subspecies.

A. Upper plumage ruddy brown .... *P. r. ruficollis*, p. 216.
B. Upper plumage olive-brown .... *P. r. bakeri*, p. 217.

(214) Pomatorhinus ruficollis ruficollis.

THE NEPAL RUFOUS-NECKED SCIMITAR-BABBLER.

Pomatorhinus ruficollis Hodgs., As. Res., xix, p. 182 (1836) (Nepal); Blanf. & Oates, i, p. 122.

Vernacular names. *Bhiakuroh* (Parbuttiahs).

Description. Upper plumage, tail and closed wing ruddy brown; a broad white supercilium from the nostrils to the nape; lores, under the eyes and ear-coverts black; sides of the neck bright ferruginous, extending to the hind neck and forming a collar; chin, cheeks and throat white; lower throat, breast and centre of abdomen white streaked with olive-brown; sides of abdomen and breast, vent and under tail-coverts olive-brown.

Colours of soft parts. Bill yellow, pale at the tip and with three-quarters of the culmen nearly black; iris pale red to crimson; eyelid plumbeous; feet pale brownish plumbeous, pale greyish or greenish plumbeous; claws brownish horny.

Measurements. Length about 195 to 205 mm.; wing 78 to 84 mm.; tail about 83 mm.; tarsus about 27 mm.; culmen about 20 mm.

Young nestlings have the whole breast rusty red. The bill is entirely yellow.

Distribution. Himalayas, Nepal to Eastern Assam, North of the Brahmaputra.

Nidification. This Scimitar-Babbler breeds from the end of April to June from 4,000 to 6,000 feet, making the usual ball-shaped nest of grass, bracken and fern fronds, etc., placed on the ground in grass, weeds or bush undergrowth. The eggs vary from three to five and are white like all other Scimitar-Babblers but have very little gloss. Fifty eggs average about 23·6 × 18·0 mm.

Habits. The Rufous-necked Scimitar-Babbler frequents elevations between 3,000 and 6,000 feet, being found still lower in winter and higher in summer. It keeps much to forest with plentiful undergrowth, but also may be sometimes found on hill-sides covered mainly with long grass and bushes.

(215) Pomatorhinus ruficollis bakeri.

BAKER'S RUFOUS-NECKED SCIMITAR-BABBLER.

Pomatorhinus ruficollis bakeri Harington, J. B. N. H. S., xxiii, p. 336 (1914) (Shillong).

Vernacular names. *Moh-Mera* (Angami Naga).

Description. Similar to the last bird, but paler and olive-brown above rather than rufous-brown; below it is more fulvous and white instead of olive-brown and white.

Colours of soft parts and Measurements as in *ruficollis*, but the bill is rather more slender.

Distribution. Hills South of the Brahmaputra in Assam, Manipur, Lushai, Chin Hills, Kachin Hills.

Nidification. Breeds in the Khasia and N. Cachar Hills in May and June, and in the Eastern Hills in April also. Later nests taken in July and August are certainly second broods. They nest everywhere between 3,000 and 6,000 feet, and though they seem to prefer humid forests, also sometimes build in recently deserted patches of cultivation where the grass and scrub is still scanty and low. The nests are the typical domed ovals of grass, bamboo and bracken leaves, but they are, perhaps, rather more tidy and smaller than most, measuring about 8″ long by 6″ wide and high. They lay three to five eggs which average (50 eggs) $23{\cdot}4 \times 17{\cdot}4$ mm.

Habits. Those of the genus. It keeps much to evergreen forest but may also be found in open bamboo jungle where it scratches about amongst the fallen leaves for a small bug-like insect on which it feeds.

Pomatorhinus ochraceiceps.

Key to Subspecies.

A. Throat and breast white.
- *a.* Upper plumage bright ochraceous .... *P. o. ochraceiceps*, p. 217.
- *b.* Upper plumage olive-brown .... *P. o. austeni*, p. 218.

B. Throat white, breast pale ochraceous .. *P. o. stenorhynchus*, p. 219.

(216) Pomatorhinus ochraceiceps ochraceiceps.

LLOYD'S SCIMITAR-BABBLER.

Pomatorhinus ochraceiceps Walden, A. M. N. H., xii, p. 487 (1873) (Shan States); Blanf. & Oates, i, p. 123.

Vernacular names. None recorded.

Description. Upper plumage bright ochraceous, the inner webs of the quills pale brown; tail paler ochraceous, the terminal halves of the feathers suffused with brown; lores and feathers at the base of the upper mandible black; a narrow white supercilium from nostrils to nape; ear-coverts rich hair-brown; chin, throat,

breast and centre of abdomen pure white; flanks, vent and under tail-coverts ochraceous.

Colours of soft parts. Iris pale brown—probably young birds—to yellowish red and bright yellow; bill vermilion with a dusky patch next forehead; legs and feet yellowish or greenish brown.

Fig. 35.—Head of *P. o. ochraceiceps.*

Measurements. Length about 220 mm.; wing 86 to 92 mm.; tail about 105 to 110 mm.; tarsus about 32 mm.; culmen about 30 to 32 mm.

Distribution. The Karen Hills and Karenni, Mts. of Tenasserim.

Nidification unknown.

Habits. Those of the genus, but Davison says that he sometimes found them in comparatively open spaces and also that he saw them moving about moderately high up in the branches of trees. They keep above 3,000 feet and are found in pairs, not flocks.

(217) Pomatorhinus ochraceiceps austeni.

HUME'S SCIMITAR-BABBLER.

Pomatorhinus austeni Hume, S. F., x, p. 152 (1881) (E. Manipur); Blanf. & Oates, i, p. 123.

Vernacular names. *Inrui-gna* (Kacha Naga).

Description. Differs from the last in having the upper plumage pale olive-brown, merely tinged with ochre on the head and neck. The flanks, vent and under tail-coverts are also olive-brown.

Colours of soft parts as in *P. o. ochraceiceps.*

Measurements as in *P. o. ochraceiceps*, but the bill measures up to 36 mm.

Distribution. Hitherto only obtained in the Eastern Manipur Hills and once, for certain, in Eastern Cachar.

Nidification. Like the other species of this genus, Hume's Scimitar-Babbler makes an oval domed nest of grass and bamboo leaves. A nest taken by myself at about 5,000 feet contained four eggs measuring about 27·8 × 19·3 mm. It was taken on the 19th of June.

Habits. This bird seems to be found between 5,000 and 6,000 feet and upwards in the more humid forests with ample under-

growth. Little is known about it, and even its distribution eastwards is still a matter of doubt.

(218) Pomatorhinus ochraceiceps stenorhynchus.

AUSTEN'S SCIMITAR-BABBLER.

Pomatorhinus stenorhynchus Blyth, J. A. S. B., xlvi, p. 43 (1877) (Sadiya); Blanf. & Oates, i, p. 123.

Vernacular names. *Inrui-gna* (Kacha Naga).

Description. Differs from *P. o. ochraceiceps* in being much paler and less richly coloured throughout. The flanks and abdomen are tinged with rufous-buff.

Colours of soft parts and **Measurements** as in the last.

Distribution. Hills South of the Brahmaputra from N.E. Cachar and Naga Hills to extreme East Assam and Sadiya North of the Brahmaputra.

Nidification. Similar to that of other Scimitar-Babblers. Of the few nests taken in N. Cachar some were placed on the ground and some on bushes or tangles of vines and creepers a few feet above it. The eggs numbered three or four, generally the latter, and rarely five, and were, like those of *P. o. austeni*, longer in proportion to their size than those of most of the genus, thirty eggs averaging 25·2 × 18·3 mm. They are also rather more fragile in texture. All the nests were found in forest, but generally close to a jungle-path, stream or open glade. The breeding season appears to be from the middle of May to early July.

Habits. I found this Scimitar-Babbler in pairs only, haunting wet, cool forests with a fair amount of undergrowth, but not the dense scrub and grass so beloved by some of its nearest relations. It was, comparatively speaking, a very quiet bird, each of the pair uttering from time to time its soft, full "hoot hoot" or a pleasant whistling chuckle. Like the rest of their tribe, they spend most of the time on the ground turning over the leaves and debris in search of food but, according to the Nagas, when the various figs are ripe they work high up into these trees in quest of the insects which infest the fruit. It is a bird of high levels, from 5,000 feet upwards to at least 9,000 feet in the Naga Hills.

Pomatorhinus erythrogenys.

Key to Subspecies.

A. Flanks deep rufous.
  a. Breast almost pure white.
    a'. Wing over 89 mm. .... *P. e. erythrogenys*, p. 220.
    b'. Wing under 89 mm............ *P. e. imberbis*, p. 222.
  b. Breast pale grey, streaked with white. *P. e. haringtoni*, p. 220.
  c. Breast white, streaked with black .. *P. e. gravivox*, p. 221.
B. Flanks olivaceous .... *P. e. macclellandi*, p. 221.

(219) Pomatorhinus erythrogenys erythrogenys.

VIGORS'S RUSTY-CHEEKED SCIMITAR-BABBLER.

Pomatorhinus erythrogonys Vigors, P. Z. S., 1831, p. 173 (W. Nepal) Blanf. & Oates, i, p. 124.

Vernacular names. *Ban-bukra* (Mussoorie).

Description. Upper plumage, closed wings and tail olive-brown; lores white, streaked with grey; some white feathers on the eyelids; a moustachial stripe, red near the bill and then black; forehead, ear-coverts, sides of the neck, thighs and under tail-coverts chestnut; sides of breast and body chestnut washed with olivaceous; chin, throat, centre of breast and abdomen white. There are only the faintest indications of grey striæ on the breast.

Colours of soft parts. Iris light greenish white, yellowish white or pale bright yellow; legs and feet fleshy or fleshy-brown; bill yellowish-horny.

Measurements. Length about 280 to 290 mm.; wing 95 to 105 mm.; tail about 100 mm.; tarsus about 40 mm.; culmen about 33 to 35 mm.

Distribution. N.W. Himalayas to Simla.

Nidification. These birds breed in May and June, making the same kind of large oval nest as the other birds of this genus. They ascend at least as high as 8,000 feet and possibly to 10,000 but are most often found in summer between 3,000 and 5,000. They build on grass-covered hills and in open scrub-jungle more frequently than the other species do and nests may often be found some little distance from heavy cover. Hodgson says they lay three or four eggs but two will be found hard-set far more often than four. Thirty eggs average about 27·9 × 20·3 mm. They are rather broad ovals in shape.

Habits. The Rusty-cheeked Scimitar-Babblers haunt both underwood in dense forest, grass-covered sides of hills and deserted patches of cultivation where the vegetation is still sparse. They feed like the rest of the genus on grubs, beetles, earthworms and insects of all kinds, and their voice is the typical triple "hoot." They consort in small parties of three or four to a dozen individuals, are secretive in their habits, though not really shy, and they indulge in the same conversational outbursts and quaint dances that their relations delight in.

(220) Pomatorhinus erythrogenys haringtoni.

BAKER'S RUSTY-CHEEKED SCIMITAR-BABBLER.

Pomatorhinus haringtoni Stuart Baker, Bull. B. O. C., xxxiii, p. 123 (1914) (Darjiling).

Vernacular names. *Yongo-hut-pho* (Lepcha).

Description. This race differs from the last in having the whole chin, throat and upper breast dark ashy, the feathers of the chin and throat having white bases and those of the breast white central streaks.

Colours of soft parts as in *P. e. erythrogenys.*

Measurements. This form is a little smaller than the last, wing 92 to 102 mm.

Distribution. Himalayas, Garhwal to Sikkim.

Nidification. Breeds in May and June at all elevations between 2,000 and 8,000 feet. The nests and eggs cannot be distinguished from those of the last.

Habits do not differ from those of *P. e. erythrogenys.*

(221) Pomatorhinus erythrogenys macclellandi.

McClelland's Scimitar-Babbler.

Pomatorhinus macclellandi Jerdon, B. of I., ii, p. 32 (1863) (Khasia Hills); Blanf. & Oates, i, p. 125.

Vernacular names. *Dao-gurrum-buku* (Cachari).

Description. In this race the flanks are olivaceous instead of rufous, and the breast is white streaked with dark ashy brown.

Colours of soft parts as in *erythrogenys.*

Measurements. This is a smaller bird than the last two, with a wing of about 87 to 93 mm. In this, as in all the Scimitar-Babblers, the female is decidedly smaller than the male, and the smaller dimensions given refer to that sex. The bill is only about 30 to 32 mm. and more slender than in the previous two races.

Distribution. Assam, South of the Brahmaputra and Chin Hills.

Nidification similar to that of the last two birds. Forty eggs average 26·5 × 19·3 m. The breeding season lasts from early April to late June, and nests may be found at all elevations between 2,500 and 6,000 feet.

Habits. These do not differ from those of other birds of the same genus, but this race wanders down very low in winter, for Stevens obtained it in the Lakhimpur plains in January to March.

(222) Pomatorhinus erythrogenys gravivox.

David's Scimitar-Babbler.

Pomatorhinus gravivox David, Ann. Sci. Nat., xviii, p. 2 (1873) (South Shensi).

Vernacular names. *Chi-ba-wo-graw* (Kachin).

Description. Differs from *P. e. macclellandi* in having the flanks rufous and the breast streaked with black.

Colours of soft parts and **Measurements** as in *P. e. macclellandi.*

Distribution. Bhamo Hills, Yunnan into China.

Nidification. This Scimitar-Babbler breeds in some numbers in the Bhamo Hills from 5,000 feet upwards and Harington took several nests at 5,500, which he describes as domed and placed on, or close to, the ground. The eggs are laid from the middle of March to early May and usually three form the full clutch, sometimes two only. They are rather broad ovals and measure about 27·0 × 21·0 mm.

Habits. Harington records that this bird is very noisy in the mornings and evenings, having a fine Blackbird-like song, which it often repeats.

(223) Pomatorhinus erythrogenys imberbis.

SALVADORI'S SCIMITAR-BABBLER.

Pomatorhinus imberbis Salvad., Ann. Mus. Civ. Gen., (2) vii, p. 410 (1889) (Yado, N.E. Leito).

Vernacular names. None recorded.

Description. Practically the same in coloration as Vigors's Rusty-cheeked Scimitar-Babbler but much smaller.

Colours of soft parts as in Vigors's Scimitar-Babbler.

Measurements. Wing about 84 to 88 mm.; tail about the same; tarsus about 37 mm.; culmen about 30 to 31 mm.

Distribution. Hills of Eastern Burma from the Ruby Mines to Tenasserim.

Nidification. Mr. J. P. Cook found this bird breeding at Kalaw in some numbers in thin grass and scattered scrub-jungle at an elevation of about 3,200 feet. The nest he describes as like that of other Scimitar-Babblers and on the 13th April he took a single egg, hard-set, measuring 26·0 × 20·3 mm.

Habits. Frequents grass-land and thin scrub rather than forest or heavy jungle.

Pomatorhinus hypoleucus.

Key to Subspecies.

a. Sides of head not streaked with white . . . . *P. h. hypoleucus*, p. 222.
b. Sides of head streaked with white . . . . *P. h. tickelli*, p. 223.

(224) Pomatorhinus hypoleucus hypoleucus.

THE ARRAKAN SCIMITAR-BABBLER.

Othorhinus hypoleucus Blyth, J. A. S. B., xxiv, p. 273 (1875) (Arrakan).
Pomatorhinus hypoleucus. Blanf. & Oates, i, p. 126.

Vernacular names. *Dao-hoot* (Cachari).

Description. Upper plumage olive-brown, deeply tinged with

rufous on the tail and exposed parts of closed wing; ear-coverts and cheeks greyish brown; lores grey; a line commencing above the eye, passing over the ear-coverts and terminating in a broad patch behind them bright rusty; chin, throat, breast, and abdomen white; sides of breast deep slaty streaked with white, the breast with a few small spots of slaty-grey; sides of body and thighs rufous-ashy; under tail-coverts ferruginous.

Colours of soft parts. Iris brown to deep red-brown; the naked patch behind the eye is a dull livid, or bluish flesh-colour; bill pale horny with a yellow, grey or green tinge in it; legs and feet pale plumbeous or slaty-grey.

Measurements. Length about 300 mm.; wing 105 to 112 mm.; tail about 110 to 120 mm.; tarsus about 38 mm.; culmen about 40 mm.

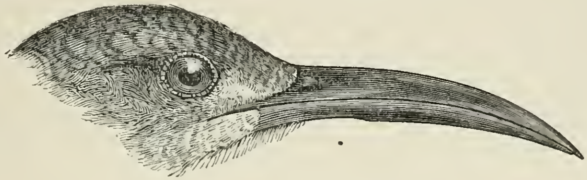


Fig. 36.—Head of *P. h. hypoleucus.*

Distribution. Assam, North and South of the Brahmaputra, Chittagong, Manipur, Lushai, Arrakan and the Chin Hills.

Nidification. This Babbler breeds principally at quite low levels throughout its range, but may be found nearly up to 4,000 feet. It breeds in the end of March to early May, making a huge oval nest about a foot or more in length by nearly as much in breadth. It is composed of leaves, grass and bamboo spathes very roughly and loosely put together, nearly always on the ground, rarely on a bush or tangle of creepers. Twelve eggs average 30·6 × 22·1 mm.

Habits. The Arrakan Scimitar-Babbler is always found in pairs, hopping about on the ground in the thickest of undergrowth, and it is particularly partial to the most impenetrable cane-brakes in swampy places. Its voice is the triple "hoot" of the genus, but can be distinguished from that of the previous birds by its deep mellowness. Inglis says that the male has a deeper hoot than the female. This species eats small shells, snails, etc., as well as the usual insect food of the other species.

(225) Pomatorhinus hypoleucus tickelli.

TICKELL'S SCIMITAR-BABBLER.

Pomatorhinus tickelli Blyth, J. A. S. B., xxiv, p. 273 (1875) (Tenasserim); Blanf. & Oates, i, p. 127.

Vernacular names. None recorded.

Description. Differs from the preceding bird in being a richer olive-brown above and in having the rufous head-patch streaked with white, the streaks increasing in size and extending on to the rufous of the neck and shoulders.

Colours of soft parts. The legs and feet vary a good deal, being pale bluish green, very pale brown, or pale whitish blue; the upper mandible pale brown, the lower mandible pale whitish blue; iris pale to dark brown and brownish red; naked patch behind the eye flesh-colour, more or less strongly tinged blue (*Hume & Davison*).

Measurements as in *P. h. hypoleucus.*

Distribution. Tenasserim.

Nidification. Mr. C. Hopwood describes its nest as like that of the Arrakan Scimitar-Babbler, but placed in clumps of bamboo and made of tendrils, twigs and roots. It breeds apparently from January to March, and lays two or three white eggs measuring about 30·2 × 22·7 mm.

Habits. Davison remarks that this Babbler keeps much to thick undergrowth, either in pairs or small parties, keeping to the ground more exclusively than any of the other Scimitar-Babblers known by him.

Genus **XIPHIRAMPHUS** Blyth, 1843.

The genus *Xiphiramphus* differs only from *Pomatorhinus* in having a much longer, more slender and still more curved bill. It contains but one species.

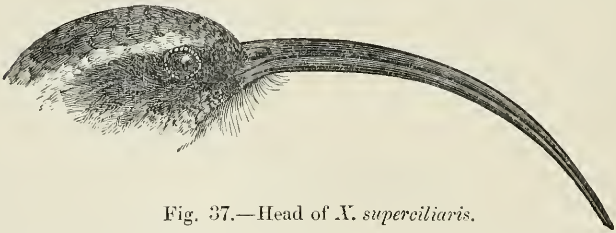


Fig. 37.—Head of *X. superciliaris.*

(226) Xiphiramphus superciliaris.

THE SLENDER-BILLED SCIMITAR-BABBLER.

Xiphiramphus superciliaris Blyth, J. A. S. B., xi, p. 175 (1842) (Sikkim); Blanf. & Oates, i, p. 128.

Vernacular names. *Karriok-tamveep* (Lepcha).

Description. Lores black; chin and throat white streaked with ashy; a white supercilium, the rest of the head slaty-grey; upper plumage bright rufous-brown; tail dark brown or blackish, the

outer webs tinged with rufous at the base; wings dark brown, the outer webs olive-brown and the inner secondaries rufous-brown; breast and abdomen ferruginous; flanks, vent and under tail-coverts rufous-brown; thighs plumbeous.

Colours of soft parts. Iris red-brown to almost vermilion; bill black, paler at tip; legs dull grey, horny-grey, or plumbeous brown.

Measurements. Length about 210 to 220 mm.; wing about 72 to 77 mm.; tail about 90 mm.; tarsus about 30 mm.; culmen about 55 to 60 mm.

Distribution. Sikkim, Bhutan and hills South of the Brahmaputra. I obtained it in both the Khasia and Cachar Hills, and have had it sent me from the Naga Hills.

Nidification. This bird breeds from April to July between 4,500 and 8,000 feet, but as a rule over 5,000 feet. It makes the usual grass-ball nest, rather more tidy and neat than most Scimitar-Babblers and measuring roughly about 6″ in diameter. The eggs, three to five in number, are like those of the genus *Pomatorhinus*, and measure about $23{\cdot}8 \times 18{\cdot}1$ mm.

Habits. These are typically those of the Scimitar-Babblers, but as far as I saw they were always in pairs, not flocks. Their voice is a high-pitched replica of the triple "hoot," a quite sweet note and not often uttered. They were seen frequently in bracken and fern cover and are also sometimes found in Pine forests in which the undergrowth is very scanty and confined to the ravines and hollows.

Genus **TIMALIA** Horsf., 1831.

The genus *Timalia* consists of a single species, which is characterized by the peculiar rigid shafts of the feathers of the forehead and crown and by its deep black bill. The tail is longer than the wing and much graduated, the outer feather being about half the length of the central ones.

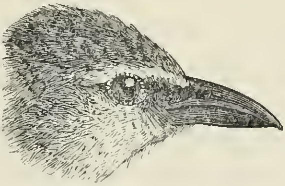


Fig. 38.—Head of *T. p. bengalensis.*

Timalia pileata.

Key to Subspecies.

A. Abdomen fulvous; upper plumage darker. . *T. p. bengalensis*, p. 226.
B. Abdomen rusty-buff; upper plumage paler. *T. p. jerdoni*, p. 227.

Fig. 39.—*Timalia p. bengalensis.*

(227) Timalia pileata bengalensis.

THE BENGAL RED-CAPPED BABBLER.

Timalia bengalensis, Godw.-Aust., J. A. S. B., xli, 2, p. 143 (1872) (Khasia Hills).
Timelia pileata. Blanf. & Oates, i, p. 132.

Vernacular names. *Dao-maogasha gashim* (Cachari); *Ingéto* (Kacha Naga); *Vongnavi* (Mikir).

Description. Forehead and short supercilium white; crown deep rufous; ear-coverts white in front and ashy behind; upper plumage and exposed part of wings olive-brown tinged with fulvous, the mantle suffused with ashy and with blackish shafts; tail brown, strongly cross-rayed; cheeks, chin and throat white; breast white with black shaft-lines; sides of neck deep grey, running on to sides of breast; remainder of lower parts fulvous or dull buff.

Colours of soft parts. Iris deep, bright red; eyelids blue-grey; legs dark blackish or purplish brown, claws horn-colour; bill black.

Measurements. Total length about 170 to 180 mm.; wing 55 to 64 mm.; tail about 80 mm.; culmen about 15 mm.

Distribution. Lower hills and sub-montane tracts from Nepal to Eastern Assam.

Nidification. These little Babblers breed from April to July, probably often having two broods. They build either on the ground, or very close to it, in grass-land, cane-jungle and in low scrub and mixed jungle. The nest is domed and measures about 7″ × 4″ with an entrance near the top about 2″ in diameter; it is composed of bamboo leaves or grass, according to whichever is the most easily obtained and is lined with grass or, occasionally, a few fine roots. The eggs, which number either three or four, rarely five, in a clutch, are broad, obtuse ovals in shape and with stout, glossy texture. The ground-colour is generally a pure china-white, rarely pinkish, and they are densely covered all over with spots and blotches of umber and reddish brown. Forty eggs average 18·3 × 13·2 mm.

Habits. The Red-capped Babbler frequents plains and low hills of grass, reeds or bush-jungle, rarely, if ever, entering forest-land. It goes about in pairs, creeping about the lower cover and every now and then taking little flutters to the top branches or longest grasses, and then dropping down again after uttering a few sweet notes. They call constantly to one another but are not noisy birds. They are found from the plains up to about 3,000 feet, but more often below 1,000 feet than over.

(228) Timalia pileata jerdoni.

The Burmese Red-capped Babbler.

Timalia jerdoni Walden, A. M. N. H., (4) x, p. 61 (1872) (Pegu).

Vernacular names. None recorded.

Description. The whole plumage more ferruginous than in *T. p. bengalensis*; the sides of the breast and flanks are more olive, but there is more white in the centre.

Colours of soft parts as in the preceding race.

Measurements. On an average this is a larger bird than the Bengal form, the wing measuring from 60 to 68 mm. and the other parts in proportion.

Distribution. Practically the whole of Burma in suitable localities from the plains up to some 2,000 or even 3,000 feet; Siam to S. China.

Nidification. Breeds from May to July, making a nest similar to that of the last bird, placed in the same kind of situation. The

eggs also resemble those of the western form, but measure about 18·7 × 14·9 mm.

Habits. Do not differ from those of the last bird. Harington states that he only found the bird in damp low-lying places in Upper Burma, whilst Oates speaks of its frequenting gardens in Lower Burma.

Genus **DUMETIA** Blyth, 1849.

This genus, which contains two common species, resembles *Timalia* very closely in structure, especially in the stiffness of the feathers of the forehead and crown. The essential difference between the two genera is that in *Dumetia* the bill is much smaller, more slender and of a pale colour, whereas in *Timalia* it is larger, deeper and black.

Key to Species and Subspecies.

A. Chin and throat rufous .... *D. hyperythra*, p. 228.
B. Chin and throat white. [p. 229.
  a. Forehead only pale rufous .... *D. albigularis albigularis*,
  b. Whole crown rufous with pale shafts . *D. a. abuensis*, p. 230.

(229) Dumetia hyperythra.

The Rufous-bellied Babbler.

Timalia hyperythra Frankl., P. Z. S., 1831, p. 118 (Ganges near Benares).
Dumetia hyperythra. Blanf. & Oates, i, p. 133.

Vernacular names. None recorded.

Description. Forehead and anterior half of crown reddish brown, the feathers of the former rigid and pointed, with large fulvous streaks and with the shafts black when viewed in certain lights; feathers round the eye white; upper plumage, tail and exposed wing olive-brown, the tail cross-rayed; cheeks fulvous with pale shafts; ear-coverts like the upper plumage but paler and with still paler shafts; entire lower plumage pale fulvous.

Colours of soft parts. Iris light to dark brown; bill pale horny or pale livid brown; legs pale fleshy-white to fleshy-grey.

Measurements. Total length about 135 to 145 mm.; wing 53 to 56 mm.: tail about 65 mm.; tarsus about 18 to 20 mm.; culmen about 12 to 13 mm.

Distribution. This little Babbler is found South as far as Khandala on the West and the Godaveri Valley on the East. Thence it is found throughout the Central Provinces, Central India, Chota Nagpur, the dry western portions of Bengal, Orissa and Behar, and thence to the Lower Himalayas from Sikkim to Kumaon. To the West it occurs as far as longitude 75°.

Nidification. The Rufous-bellied Babbler breeds from early June to the end of August and early September, making a ball-shaped nest of grass and bamboo leaves, lined with finer grass or a little hair, sometimes with no lining at all; in size it varies in diameter from 5 to 6 inches. Often the nest is placed in, or at the foot of, a clump of bamboos, at other times in grass, bushes or cactus hedges. The eggs number three or four, and are in shape short, blunt ovals with a smooth and rather glossy texture. The ground is white varying occasionally to pink, and they are rather profusely marked all over with specks and blotches of light reddish to dark brown, generally more numerous at the larger end. Fifty eggs average 17·3 × 13·8 mm.

Habits. This little bird is a typical Babbler in all its ways. Though much more shy than the "Seven-Sisters" group, it has the same gregarious, cheerful habits, the same follow-my-leader style of clambering along from one tuft of grass or one bush to another and, like those birds, is very conversational and argumentative, though it indulges in softer notes and fewer quarrels. It prefers mixed scrub and grass, or grass alone, to other haunts, but may also be found in bamboo-jungle and thin forest or secondary growth.

Fig. 40.—Head of *D. a. albigularis.*

(230) Dumetia albigularis albigularis.

THE SMALL WHITE-THROATED BABBLER.

Malacocercus albigularis Blyth, J. A. S. B., xvi, p. 453 (1847) (Mysore).
Dumetia albigularis. Blanf. & Oates, i, p. 134.

Vernacular names. *Pandi-jitta* (Tel.); *Batitchia* (Ceylon).

Description. Similar to the last, but with a pure white throat.

Colours of soft parts. Iris white to pale grey; bill fleshy, horny-brown on culmen; legs and feet pale fleshy or livid fleshy, claws horny.

Measurements. Total length about 150 to 155 mm.; wing 52 to 56 mm.; tail about 57 to 64 mm.; tarsus about 18 mm.; culmen about 12 to 13 mm.

Distribution. Ceylon and South-West India as far North as Belgaum.

Nidification. In Ceylon this little Babbler has two breeding seasons, and Mr. Wait has taken eggs from November to March

and again in June and July, but in S. India it appears to breed principally in the two latter months. It is found from the level of the plains up to at least 3,000 feet, making a little ball-shaped nest of grass about 4 to 5 inches in diameter and without any lining. It may be placed on any kind of grass, weed or scrub-jungle, the first being the favourite and either on the ground or, more often, wedged in amongst thorns and grass. The full clutch is either three or four and the eggs are miniatures of those of *Timalia* and hardly distinguishable from those of the last bird. Fifty eggs average 17·8 × 13·5 mm.

Habits. The White-throated Babbler may be found in almost any kind of cover other than actual forest. Like the last bird, it associates in small parties, which feed either on the ground or low down in the bushes and grass, skulking about much in the same way as *Turdoides* and *Argya*, constantly uttering a low chattering call with an occasional louder whistle or chirp. Like the others of the genus, they are almost entirely insectivorous, and are peculiarly fond of ants and termites. Their flight is weak and ill-controlled.

(231) Dumetia albigularis abuensis.

THE MOUNT ABU BABBLER.

Dumetia albigularis abuensis Harington, J. B. N. H. S., xxiii, p. 429 (1915) (Mt. Abu).

Vernacular names. *Pandi jitta* (Tel.).

Description. Differs from the last bird in having the whole crown chestnut and the under parts much darker.

Colours of soft parts as in the last, but the iris dark brown.

Measurements the same as in the last.

Distribution. The country round Mt. Abu, Deesa, and down to Mahabaleshwar.

Nidification and **Habits** as in *Dumetia a. albigularis*. Three eggs taken by Lieut. H. E. Barnes in Deesa measure about 17·6 × 14·0 mm.

Genus GAMPSORHYNCHUS Blyth, 1844.

This genus contains but one species, races of which are found from Sikkim to the Malay Peninsula.

They are birds of rufous or golden-brown plumage with white heads and breasts, but the young differ from the adults in having the white replaced with the colour of the upper parts, a feature in which they differ from nearly all the other *Timaliidæ*.

The tail is longer than the wing and much graduated, the outer feathers being less than two-thirds the length of the central pairs. The bill is about half the length of the head and very Shrike-like in appearance; the rictal bristles are very long. The tarsus is typically stout, but rather short in comparison to the size of the bird.

The habits, which are now well known, agree well with those of the more arboreal *Timaliidæ*, but their nidification would seem to link them with the genus *Volvocivora* and its allies. Its position is extremely doubtful, but for the present I retain the genus in the position given it by Oates.

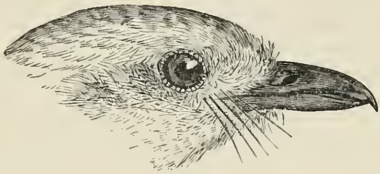


Fig. 41.—Head of *G. r. rufulus.*

Gampsorhynchus rufulus.

Key to Subspecies.

A. Upper plumage golden-brown .... *G. r. rufulus*, p. 231.
B. Upper plumage rufous-brown .... *G. r. torquatus*, p. 232.

(232) Gampsorhynchus rufulus rufulus.

THE WHITE-HEADED SHRIKE-BABBLER.

Gampsorhynchus rufulus Blyth, J. A. S. B., xiii, p. 371 (1844) (Darjiling); Blanf. & Oates, i, p. 135.

Vernacular names. *Chongto-phep-pho* (Lepcha); *Daophlantutiba* (Cachari).

Description. The whole head, neck and breast white; rictal bristles black and white in front, pure white behind; upper plumage, tail and wings golden brown; lower and median coverts and edge of wing white; quills dark brown; tail edged interiorly and tipped with yellowish buff; lower plumage pale fulvous.

Colours of soft parts. Iris pale lemon-white to deep golden yellow; bill pale fleshy-horny, darker at base and on culmen; legs reddish brown.

Measurements. Total length about 250 to 260 mm.; wing 90 to 100 mm.; tail 110 to 120 mm.; tarsus about 26 to 28 mm.; culmen about 20 to 21 mm.

The **young bird** has the white of the head and breast replaced with light chestnut, the fulvous of the abdomen extending on to the lower breast; there is no white on the wing and the upper parts are more rufous.

The adult plumage probably takes two years for completion, as the male has been found breeding in semi-mature dress.

Distribution. The lower hills of Sikkim and Bhutan, Assam North and South of the Brahmaputra, Chin Hills and Arrakan.

Nidification. Breeds in forest, making a shallow cup-shaped nest of dead leaves, a scrap or two of moss, one or two tiny twigs, all carelessly and untidily bound together with cobwebs and lined with fine roots and tendrils. The whole structure reminds one more of a Cuckoo-Shrike's nest rather than that of a Babbler. One found by myself was built in a small fork of a straggly bush, quite unconcealed and easily reached by hand. It contained four eggs with a pale yellowish ground-colour well covered with freckles, specks and blotches of reddish brown, numerous everywhere but more so at the larger end. They were much like large, dully coloured and brown eggs of *Copsychus*. They measured 23·1 × 17·1 mm., and were taken, very hard-set, on the 9th August.

Habits. This curious Babbler is found during the cold weather principally between 1,000 and 2,500 feet, frequenting bamboo-, bush- and grass-jungle and, less often, secondary growth. In the breeding season it is found nearly up to 4,000 feet, and then deserts the lighter form of cover for the densest and dampest forests. It is like the birds of the genera *Garrulax* and *Trochalopterum* in being very gregarious and very noisy, but, unlike them, keeps entirely to trees and bamboos and never works on the ground for its food. They are intensely curious and by no means shy, and will allow close observation without resentment. They fly fairly well and are much more active on the wing than most of the *Timaliidæ*.

(233) Gampsorhynchus rufulus torquatus.

The Ring-necked Shrike-Babbler.

Gampsorhynchus torquatus Hume, P. A. S. B., 1874, p. 107 (Youngzalin River); Blanf. & Oates, i, p. 136.

Vernacular names. None recorded.

Description. Differs from *G. r. rufulus* in having the upper plumage rufous-brown; the outer webs of the first primaries and the tips of all horny-grey; the tail is edged and tipped with white instead of buff and the sides of the neck are marked with rufous and black.

Colours of soft parts as in the last bird, but the legs are described as "greyish white, slaty white or fleshy white with a blue tinge."

Measurements as in White-headed Shrike-Babbler.

Distribution. The Toungoo Hills and Karenni to Tenasserim.

Nidification unknown.

Habits do not seem to differ from those of the White-headed Shrike-Babbler. Davison procured them both in bamboo and evergreen forest.

PYCTORHIS S. SINENSIS.
The Yellow-eyed Babbler
2/3 life size.

Genus PYCTORHIS Hodgson, 1844.

This genus is peculiar to India, Burma and Siam and, if one includes *Moupinia pœcilotis* Verreaux, to China.

It is characterized by a very short, deep bill without a notch and with oval and exposed nostrils; the tail is long and well graduated, the outermost feathers being about half the length of the central ones.

This genus was very well worked out by Harington, with whose conclusions I am in complete accord, but yet another geographical race named by Ticehurst must be added to the number.

Key to Species and Subspecies.

A. Bill black; forehead plain rufous.	
a. Nostrils yellow.	
a'. Upper parts paler	*P. sinensis sinensis*, p. 233.
b'. Upper parts darker and richer......	*P. s. saturatior*, p. 234.
b. Nostrils black......................	*P. s. nasalis*, p. 235.
B. Bill yellowish brown; forehead blackish with grey margins.	
c. Upper plumage reddish brown.	[p. 235.
c'. Chin, throat and upper breast whitish	*P. altirostris altirostris*,
d'. Chin, throat and upper breast grey ..	*P. a. griseigularis*, p. 236.
d. Upper plumage earthy-brown, chin and throat white	*P. a. scindicus*, p. 237.

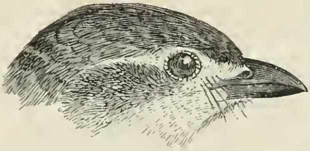


Fig. 42.—Head of *P. s. sinensis*.

(234) Pyctorhis sinensis sinensis.

THE INDIAN YELLOW-EYED BABBLER.

Parus sinensis, Gmel., S. N., i, p. 1012 (1788) (Sina) (China).
Pyctorhis sinensis. Blanf. & Oates, i, p. 137.

Vernacular names. *Gal-chasm* or *Bulal-chasm* (Hind., South); *Bara-podna* (Hind., N.W.P.); *Yerra Kali-jitta* (Tel.).

Description. Whole upper plumage, ear-coverts and sides of the neck rufescent brown, changing to cinnamon on the exposed parts of the wing-quills; lores, a short eyebrow, the eyelids, chin, throat, cheeks and breast pure white; abdomen, vent, flanks and under tail-coverts pale fulvous; tail faintly cross-rayed.

Colours of soft parts. Iris pale lemon-yellow to brightest golden;

bill black, yellowish at the nostrils; legs pale orange-yellow; claws pinkish; mouth yellow in winter, black in summer.

Measurements. Length about 170 to 180 mm.; wing 65 to 70 mm.; tail about 85 to 90 mm.; tarsus about 25 mm.; culmen about 12 mm.

Distribution. Whole of India and Burma, except those portions noted as the habitat of the next form, South to Tenasserim and extending into Siam and Annam.

Nidification. In Assam this Babbler breeds principally between the 15th May and 15th July, but in India, further south, they breed from June to September, whilst Col. Sparrow took them in Trimulgherry in October. The nest is a beautifully built cup or inverted cone of fine soft grass and fibre lined with the same and well bound with cobwebs. It may be placed in a bush, a weed, a clump of grass or in sugar-cane or crops. In Assam they build in the centre of the great seas of sun-grass which run for miles over the undulating plateaus between 1,000 and 3,000 feet and are never found elsewhere, but in other parts of India they build in all kinds of scrub- and grass-land and even in gardens. The eggs number three to five and vary greatly in colour. The most common type is pale yellowish or pink in ground-colour, rather densely marked all over with light red speckles and spots or more rarely blotches. Another type has bold smears and blotches of pale pinky-red, reddish brown or deep purple-brown, sometimes with a few irregular streaks and lines and generally with some underlying marks of a dull neutral tint. A third type has a pure white ground with bold blotches of deep purple-brown at the larger end. 100 eggs average 17·9 × 14·9 mm.; the maxima are **20·3** × 16·5 and 20·1 × **16·6** mm., and the minima **16·8** × 15·0 and 17·0 × **13·6** mm.

Habits. Found at all elevations from the plains up to nearly 6,000 feet, but is most common under 2,500 feet. It is not a gregarious bird, but keeps in pairs, wandering about in grass, scrub, secondary growth and even in gardens and the bushes surrounding villages, but never in forest. It clambers about much as the typical Babblers do in the lower growths, but does not feed on the ground and flies better and more freely than they do. It has a sweet note, almost a song, in the breeding season, which it frequently utters from the top of some high piece of grass or other perch elevated above its surroundings.

(235) Pyctorhis sinensis saturatior.

THE BHUTAN YELLOW-EYED BABBLER.

Pyctorhis sinensis saturatior Ticehurst, Bull. B. O. C., xlii, p. 57 (1922) (Bhutan Doars).

Vernacular names. None recorded.

Description. "Upper parts, especially head, saturated; very dark brown, paling only on the rump. Chestnut colour of wings darker" (*Ticehurst*).

Colours of soft parts and **Measurements** as in the last.

Distribution. "Bhutan and Buxa Dooars, Sikkim" (*Ticehurst*). I cannot distinguish this bird from those obtained in Nepal and the whole of West Assam, North of the Brahmaputra. Birds from the South of this river and from Bengal and the Chin Hills are nearer the typical form.

Nidification similar to that of the typical race and 12 eggs in my collection average exactly the same as those of that bird.

Habits. This is a common bird in all the wide grass-covered areas from the foot-hills up to at least 6,000 feet. It has, of course, exactly the same habits as the last bird, from which it is only very slightly distinguished in colour.

(236) Pyctorhis sinensis nasalis.

THE CEYLON YELLOW-EYED BABBLER.

Pyctorhis nasalis Legge, A. M. N. H., (5) iii, p. 169 (1879) (Ceylon); Blanf. & Oates, i, p. 138.

Vernacular names. *Yerra-Kali-jitta* (Tel.).

Description. Differs from *P. s. sinensis* in having the exposed portions of the wing-quills concolorous with the back, and in having more white on the sides of the head.

Colours of soft parts similar to the typical form, but with very little or no yellow about the nostrils.

Measurements. A rather smaller bird than the Indian form; wing 59 to 63 mm. and other measurements in proportion.

Distribution. Ceylon only.

Nidification. Breeds from December (*W. W. A. Phillips*) to May (*Legge*), making a nest similar to that of *P. s. sinensis* but laying only two or three eggs. The few eggs I have seen resemble the most common type of egg described above for *P. s. sinensis*, but they only measure 17·5 × 13·8 mm. (19·4 × 14·4 mm., *Hume*).

Habits. The same as those of the preceding subspecies.

(237) Pyctorhis altirostris altirostris.

JERDON'S BABBLER.

Chrysomma altirostris Jerd., Ibis, 1862, p. 22 (Thayetmyo).
Pyctorhis altirostris. Blanf. & Oates, i, p. 139.

Vernacular names. None recorded.

Description. Forehead and a broad stripe to the eye hoary grey

with black centres to the feathers; sides of head and neck rufous-grey-brown; whole upper plumage reddish brown, darkest on the wings and tail; chin, throat and upper breast whitish; remainder of lower plumage pale fulvous,

Colours of soft parts. "Upper mandible pale horn-colour, lower pinkish flesh-colour; iris hazel-brown; eyelid and orbital skin greenish yellow; legs and feet pinkish brown" (*Oates*).

Measurements. Total length about 165 mm.; wing 57 to 62 mm.; tail about 80 mm.; tarsus about 22 mm.; culmen about 12 mm.

Distribution. The plains of Lower Burma.

Nidification. A nest and eggs sent to me as belonging to this bird do not differ from those of the Yellow-eyed Babbler, the eggs being of the boldly marked cream-coloured type. The five eggs measure 17·0 × 14·1 mm.

Habits. This Babbler seems to be confined to swampy, low-lying plains, covered with ekra or elephant-grass where it is very abundant. It is, however, such an inveterate skulker and flies so seldom that it is very hard to watch or to shoot unless high floods practically cover its hiding places. It lives in great part on grasshoppers, large and small, and its note is said to be quite different from that of *sinensis* but has not been more minutely described.

(238) Pyctorhis altirostris griseigularis.

HUME'S BABBLER.

Pyctorhis griseigularis Hume, S. F., v, p. 116 (1877) (Assam).

Vernacular names. *Tiri-sorai* (Assamese).

Description. Differs from Jerdon's Babbler in having the chin, throat and upper breast grey instead of white, and the lower breast, abdomen and flanks dull rufous instead of pale fulvous.

Colours of soft parts. "Bill pale horny, nearly white towards base of lower mandible; legs pale fleshy or orange-brown; feet darker" (*Hume*); iris brown or golden brown, eyelid and orbital skin yellowish green.

Measurements. Wing 62 to 64 mm.

Distribution. The sub-Himalayan plains from the Bhutan Duars to the extreme east of Assam; Cachar and Sylhet Plains.

Nidification. I found this little Babbler very common and breeding in great numbers in the ekra and elephant-grass plains in N. Lakhimpur, where I took several nests. These are facsimiles of the neat, compact cups of the Yellow-eyed Babbler, but are less often shaped like inverted cones, having the bottom rounded off. The nests found were always spotted by the bird being seen to quit, otherwise in these vast seas of grass they would never be

seen, for though they will sit on the nest until an elephant or buffalo almost touches them, they slink away amongst the grass long before a man on foot can get near them. I obtained nests in the months of April and July, but presume they are principally "Rains" breeders when their food—grasshoppers—are most numerous. The few eggs I have seen are very beautiful, having a pale or bright pink ground-colour, with handsome blotches and smears of reddish brown or light red with secondary markings of neutral tint. Fourteen eggs average about 18·1 × 14·6 mm.

Habits. This little Babbler seems to be found only in the plains or in the rolling stretches of "sun-grass" lands on the foot-hills of the Himalayas. It is found always in pairs and always in grass of some kind though this may be anything from two to twenty feet high. It has a sweet little song of some dozen notes or so which it sings from the highest piece of grass near its nest.

(239) Pyctorhis altirostris scindicus.

THE SIND BABBLER.

Pyctorhis altirostris scindicus Harington, Jour. B. N. H. S., xxiii, p. 424 (1918) (Sukkur in Scind).

Vernacular names. *Mullala* (Sind).

Description. Differs from Jerdon's Babbler in having the upper plumage fulvous, chin and throat white, breast and remainder of lower plumage ochraceous.

Colours of soft parts as in *P. a. altirostris.*

Measurements. Wing 65 mm.; culmen 12 mm.

Distribution. Sind only.

Nidification and Habits. Nothing recorded.

Genus PELLORNEUM Swainson, 1831.

In this genus I include Harington's three genera—*Pellorneum*, *Scotocichla* and *Drymocataphus*, the last and first only of which Oates recognized in the Avifauna. These genera have generally been divided on account of the alleged difference in the comparative length of wing and tail, but a glance at the measurements of the various species suffices to show that this does not form a sufficient ground for their separation. Thus *Pellorneum palustre* has always been accepted as a typical *Pellorneum*, yet this is the only species or race in the three genera in which the tail exceeds the wing in length. In all the other species the tail is always shorter than the wing, and the three genera only differ in this respect in degree.

In *Pellorneum*, as now accepted, the tail is shorter than the wing, with the one exception of *P. palustre*, but is equal to or longer than twice the length of the tarsus; the bill is about equal to, or

a little more than, three quarters the length of the head, straight and notched at the tip; the nostrils are not overhung by hairs and the rictal bristles are very short.

Key to Species and Subspecies.

A. Breast boldly streaked with dark brown.	
a. Mantle not streaked.	
a'. Crown rufous	*P. ruficeps ruficeps*, p. 238.
b'. Crown pale chestnut	*P. r. subochraceum*, p. 239.
c'. Crown dark chestnut	*P. r. granti*, p. 240.
b. Mantle streaked with dark brown.	
d'. Upper back streaked with dark brown.	
a''. Less olive, more rufous	*P. r. mandellii*, p. 240.
b''. Less rufous, more olive	*P. r. jonesi*, p. 241.
e'. Upper back with no definite streaks.	*P. r. minus*, p. 242.
B. Breast streaked brown and greyish buff.	*P. palustre*, p. 242.
C. Breast either not streaked at all or only obsoletely so.	
c. Crown concolorous with back; forehead without pale shafts.	
f'. Above fulvous olive-brown	*P. tickelli tickelli*, p. 247.
g'. Above rufescent olive-brown	*P. t. assamensis*, p. 248.
d. Crown concolorous with back but forehead pale shafted.	
h'. Breast tinged brownish	*P. ignotum ignotum*, p. 243.
i'. Breast tinged bright rufous	*P. i. cinnamomeum*, p. 244.
e. Crown darker than back.	
j'. Cap nearly chocolate-brown	*P. fuscicapillum fuscicapillum*, p. 245.
k'. Cap olive-brown	*P. f. babaulti*, p. 245.
l'. Cap black	*P. nigricapitatum*, p. 246.

(240) Pellorneum ruficeps ruficeps.

The Spotted Babbler.

Pellorneum ruficeps Swains., F. Bor.-Am., Birds, p. 487 (1831) (Nilgiris); Blanf. & Oates, i, p. 141.

Vernacular names. *Adavi-lika-jittu* (Tel.).

Description. Forehead, crown and nape dull rufous; whole upper plumage and exposed parts of wings, sides of neck and tail olive-brown, the latter tipped with white; lores and an indistinct supercilium creamy-white; sides of the head rufous, paler than the crown and mottled with black round the eye, and the ear-coverts streaked with brown; chin, throat and cheeks white; lower plumage white or pale fulvous white boldly streaked with black on the breast and flanks and suffused with olivaceous on the latter and thighs; under tail-coverts olive-brown edged with white.

Colours of soft parts. Iris red to crimson-lake, but cinnamon-brown in the young; upper mandible dark brown, lower white to fleshy-white; legs, feet and claws fleshy-white.

Measurements. Length about 160 to 170 mm.; wing 72 to 76 mm.; tail 64 to 67 mm.; tarsus about 26 mm.; culmen about 17 to 18 mm.

Distribution. The Indian Peninsula south of Khandesh and the hills of Chota Nagpur. Cachar birds formerly identified for me as *ruficeps* are nearer *minus*, but the normal birds of this part of Assam are *mandellii*. Birds of S.W. India from Coorg, Wynaad, S.W. Mysore and Travancore belong to the race called *granti*.

Nidification. This bird breeds in March, April and May, making a very rough globe-shaped nest of leaves and grass, very flimsy and fragile and, according to Miss Cockburn, often a mere canopy for the eggs, which rest on fallen leaves and rubbish. It is invariably placed on the ground and generally under shelter of a stone or bush. The eggs are either two or three in number and in shape broad, regular ovals. The general colour is a very pale greenish or yellowish white, profusely speckled and freckled all over with reddish brown and underlying spots of pale grey and neutral tint. They average about $21{\cdot}1 \times 16{\cdot}3$ mm.

Habits. The Spotted Babbler is found from about 2,000 feet up to some 6,000 feet or higher, descending lower in the winter but not apparently breeding. According to Miss Cockburn and Jerdon it goes about in small flocks when not nesting, but other observers record it as being found in pairs or singly. It haunts scrub-jungle and secondary growth and also undergrowth in tree-forest, not ascending into trees but, on the other hand, often hopping about on the ground in search of its insect food. It keeps up a constant chatter and has a wide variety of notes, occasionally loud and discordant but for the most part soft and often sweet and pleasing. It is a shy bird and shuns observation.

(241) Pellorneum ruficeps subochraceum.

THE MALAY SPOTTED BABBLER.

Pellorneum subochraceum Swinh., A.M.N.H., (4) vii, p. 259 (1871) (Rangoon); Blanf. & Oates, i, p. 142.

Vernacular names. None recorded.

Description. Very close to the last bird, but has the crown chestnut and is smaller.

Colours of soft parts. "Iris red; upper mandible dark brown, lower yellow at the base, changing to light brown at the tip; legs light brownish yellow" (*Oates*).

Measurements. Wing 62 to 68 mm., average about 64 mm.

Distribution. Lower Burma from Toungoo and the Karen Hills to the Malay Peninsula, Annam and Cochin China.

Nidification. Apparently exactly like that of *P. r. mandellii*, described hereafter. Breeds from March to August, probably

having two broods. The eggs only differ from those of *P. r. mandellii* in averaging rather smaller; 20 measure about 21·6 × 16·4 mm.

Habits. Those of Mandelli's Babbler.

(242) Pellorneum ruficeps granti.

THE TRAVANCORE SPOTTED BABBLER.

Pellorneum ruficeps granti Harington, Bull. B. O. C., xxxiii, p. 381 (1913) (Travancore).

Vernacular names. *Adavi-liku-jittu* (Tel.).

Description. Similar to *P. r. ruficeps* but altogether a darker, more richly coloured form. The head is dark chestnut rather than rufous.

Colours of soft parts. Irides dark red-brown to crimson; bill above black, below horny-white; legs, feet and claws pale fleshy.

Measurements. Length about 160 to 170 mm.; wing 74 to 78 mm.; culmen 18 mm.; tarsus 28 mm.

Distribution. S.W. India, Travancore, Wynaad, Coorg and S.W. Mysore.

Nidification. Nothing recorded. Eggs sent me by Messrs. J. Stewart and T. F. Bourdillon are not separable from those of the Spotted Babbler and measure almost 21·8 × 16·3 mm.

Habits. Is found throughout its range between 1,500 and 4,000 feet, but principally about 2,000 feet.

(243) Pellorneum ruficeps mandellii.

MANDELLI'S SPOTTED BABBLER.

Pellorneum mandellii Blanf., J. A. S. B, xli, p. 165 (1844) (Sikkim); Blanf. & Oates, i, p. 140.

Vernacular names. *Dao-priti-pit* (Cachari).

Description. Differs from all preceding forms in having the feathers of the hind neck and sides of the neck blackish on the outer web, creamy-buff on the inner, forming broad streaks on the sides of the mantle. The lower plumage is more fulvous.

Colours of soft parts. Iris hazel to deep crimson, dull pale brown in the young; upper mandible dark horny-brown, lower pale yellowish or horny-white; legs and feet pale fleshy or fleshy-white.

Measurements. Length about 165 to 175 mm.; wing 66 to 73 mm., average 70 mm.; tail about 66 to 68 mm.; tarsus about 25 to 26 mm.; culmen about 16 to 17 mm.

Distribution. From Nepal eastwards through the Himalayas, North and South of the Brahmaputra in Assam, Manipur, extreme North of Chin and Kachin Hills, and Bhamo.

Nidification. Mandelli's Babbler breeds from March to May, a second brood being very often found from May to July or even August. Their favourite elevation is between 2,000 and 3,000 feet and their favourite country bamboo-jungle, the lightest of grass or scrub undergrowth, or poor secondary growth in deserted cultivation; more rarely their nests may be found in undergrowth of forests. Wherever found the nests are always on the ground

Fig. 43.—Head of *P. r. mandellii.*

unless in bamboo clumps a few inches to 2 or 3 feet above it. They are made of grass and bamboo leaves, or of the latter alone merely lined with grass and in shape are large oval balls. Sometimes, when the fallen leaves lie so thick as to completely hide the nest, this is merely a deep cup or semi-domed affair and I have seen such buried deep in piles of bamboo leaves and dead grass. They are very fond of placing their nests at the edge of elephant or gaur tracks, where it seems a wonder they can escape being trampled on. The eggs, three or four in number, are like those of *P. r. ruficeps*, but are perhaps rather more richly marked on the whole. 200 eggs average 22·4 × 16·3 mm.; maxima **24·19** × 17·1 and 21·7 × **18·8** mm.; minima **20·5** × 16·1 and 20·6 × **15·3** mm.

Habits. During the winter this little Babbler goes about either in pairs or family parties of five or six, frequenting the kind of cover described above. They are very restless, energetic birds, constantly on the move and keeping up a never-ending chatter amongst themselves. They feed both on the ground and on bushes and grass, and from their partiality to thin cover are easy to watch as long as one keeps perfectly still, but a movement of hand or foot sends them scuttling off into denser cover, whence they loudly expostulate against the disturber. They have many sweet notes as well as harsh ones, but their prevailing note is that of the genus, a constantly repeated "pretty-dear, pretty-dear."

(244) Pellorneum ruficeps jonesi.

The Western Spotted Babbler.

Pellorneum ruficeps jonesi Stuart Baker, Bull. B. O. C. xli, p. 9 (1920) (Kalka).

Vernacular names. None recorded.

Description. Differs from Mandelli's Babbler in having the general tone of plumage more brown and less olive; the cap is

more brown and the black markings on the nape even more highly developed.

Colours of soft parts and **Measurements** as in *mandellii*; wing 74 mm.

Distribution. Kalka, Bhagat State, N.W. Himalayas; Garhwal.

Nidification unknown.

Habits. Shot by Mr. A. E. Jones in thick undergrowth of forest.

(245) Pellorneum ruficeps minus.

SHARPE'S SPOTTED BABBLER.

Pellorneum minus Hume, S. F., i, p. 298 (1873) (Thayetmyo); Blanf. & Oates, i, p. 141.

Vernacular names. None recorded.

Description. Intermediate between *mandellii* and *subochraceum*, having the hind neck streaked but no dark markings on the back as in the former.

Colours of soft parts and **Measurements** as in *mandellii.*

Distribution. Constant in character in the Chindwin, Chin Hills, Myingyan, Meiktila districts, and Central Burma to Thayetmyo. Individuals quite inseparable from this form occur throughout the range of *P. r. mandellii*, and are quite common in Assam, south of the Brahmaputra. The distribution is most puzzling, the more so as now and then specimens of this form are also met with in the area occupied by *subochraceum*. It is rather doubtful whether it should be given the status of a subspecies.

Nidification and **Habits** similar to those of *mandellii*. Forty eggs average about 21·5 × 16·4 mm.

(246) Pellorneum palustre.

THE MARSH SPOTTED BABBLER.

Pellorneum palustre Jerdon, Ibis, 1872, p. 300 (Cherrapunji, Assam); Blanf. & Oates, i, p. 143.

Vernacular names. *Dao-priti-pit kashiba* (Cachari).

Description. Upper plumage olive-brown, the forehead and a line over the lores bright rufous; tail and exposed parts of wing rufous; lores white; cheeks white barred with brown; ear-coverts rufous mottled with brown and with pale shafts; chin, throat and centre of breast and abdomen white; the remainder of the lower plumage rich ochraceous buff; the whole breast and sides of the body with heavy, dark brown streaks.

Colours of soft parts. "Iris bright brown; bill horny-brown; base of lower mandible tinged blue; tarsus pale horny-blue" (*H. Stevens*).

Measurements. Total length about 160 mm.; wing 62 to 68 mm.; tail about 64 to 69 mm.; tarsus about 26 mm.; culmen about 15 mm.

Distribution. Assam, South of the Brahmaputra and N. Lakhimpur, North of that river.

Nidification. I found the bird breeding in the North of N. Cachar in the wide stretches of upland grass. In the hollows water stood for the greater part of the year, but the nests were built on the higher lands, tucked in amongst the roots of grass or under the protection of some small shrub or weed. Later I found them breeding in Cachar and Sylhet Plains and again in Lakhimpur where the nests were all built in reeds and grass on the banks of rivers and edges of swamps. April to June appear to be the breeding months, and the nest and eggs are similar to those of *P. r. mandellii*, but the latter measure only about 20·6 × 15·7 mm.

Habits. The Marsh Spotted Babbler is found principally in the plains, but wanders up to at least 2,500 feet. Jerdon obtained it both in long grass and reeds and in "bushes and low tree-jungle," but I have never seen it in cover other than grass and reeds, though this may vary from short sun-grass in N. Cachar, not 2 feet high, to the dense elephant-grass of the plains, over 12 feet high. The note is a sharp double chirp, syllabefized by Stevens as "chi-chew," constantly repeated. They are rather noisy but very skulking little birds, and one seldom sees them under ordinary circumstances, but when beating for game they may often be seen flitting in a rather lop-sided manner from one patch of grass to another.

(247) Pellorneum ignotum ignotum.

The Assamese Babbler.

Pellorneum ignotum Hume, S. F., v, p. 339 (1877) (Sadiya, Assam); Blanf. & Oates, i, p. 144.

Vernacular names. *Dao-chiki* (Cachari).

Description. Whole upper plumage, tail and exposed parts of the wing rufescent olive-brown; wings and tail rather more rufescent than the back; lores and over the eyes greyish brown; ear-coverts brown with paler shafts; sides of neck like the back; chin, throat, centre of breast and abdomen dull white, very slightly mottled with rufescent brown; remainder of lower plumage rusty-brown.

Colours of soft parts. Iris dark brown; bill pale bluish-horny, paler still on lower mandible; legs and feet light sienna-grey to fleshy.

Measurements. Length about 150 mm.; wing 56 to 59 mm.; tail 51 to 55 mm.; tarsus about 23 mm.; culmen about 12 to 13 mm.

Distribution. Assam south of the Brahmaputra and in the extreme north-east, where it has been observed in Sadiya. Stevens also obtained it in N. Lakhimpur, west of the Subansiri, so it may extend a good deal further west than hitherto recorded.

Nidification. The Assamese Babbler breeds from 3,000 feet up to at least 5,500, and possibly much higher, the breeding season commencing in May and lasting until the end of July. The nest is made of grasses and bamboo leaves, lined with the former. It is smaller, better and more compactly made than most nests of this genus and very often is a deep cup in shape, rather than domed. It also differs from the nest of other species of *Pellorneum* in being placed well *above* the ground, in bamboo clumps, tangles of vines or in bushes, and never *on* the ground. The eggs number three or four, sometimes two only, and are pale pink in ground-colour, with freckles of rather dark brownish red profusely scattered over the whole surface, but sometimes even more numerous at the larger end, where they may form a cap or ill-defined zone. In shape they are regular ovals and the texture is fairly close and smooth, there is but little gloss and the shell is rather fragile in comparison with the size. Two hundred eggs average 20·0 × 15·1 mm.; maxima 22·8 × 15·5 and 21·1 × 15·9 mm.; minima 18·2 × 14·1 mm.

Habits. This is a shy, quiet little bird, found either in small flocks or in pairs. Its notes are low and soft, and its alarm and call-note is a low, rippling whistle. It is most common between 3,000 and 5,000 feet, but wanders much higher in summer and descends practically to the plains in winter. In this latter season it shows a marked fondness for bamboo-jungle, especially such as has a little undergrowth, but in summer it keeps more to thin scrub and brushwood and even to thicker forest. It is an extraordinarily close sitter and will remain blinking at one from its nest until almost touched.

(248) Pellorneum ignotum cinnamomeum.

RIPPON'S BABBLER.

Drymocataphus cinnamomeus Rippon, Bull. B. O. C., xi. p. 12 (1900) (Loi Mai, S. Shan States).

Vernacular names. None recorded.

Description. Differs from the last bird in having the upper parts olive-brown and not rufescent, the breast more rufous and the chin and throat whitish with arrow-shaped tips.

Colours of soft parts. Iris orange-red; bill dark horn, the lower mandible paler; legs pale horn (*Harington*).

Measurements. Wing 51 to 57 mm.; tail about 50 to 55 mm.; tarsus about 24 mm.; culmen about 12 mm.

Distribution. Shan States and Bhamo Hills above 5,000 feet to S. Annam.

Nidification. Similar to that of the Assamese Babbler but the

nest is more often placed in grass nearer the ground. The eggs, generally two only in number, sometimes three, are like those of that bird, but are pinker or more terra-cotta in tint. Fifty eggs average 20·4×15·0 mm.

Habits. Those of the last bird. Robinson and Kloss record it from 3,000 feet, Dran, S. Annam.

(249) Pellorneum fuscicapillum fuscicapillum.

THE BROWN-CAPPED BABBLER.

Drymocataphus fuscicapillus Blyth, J. A. S. B., xxiii, p. 815 (1849) (S.W. Ceylon).

Pellorneum fuscicapillum. Blanf. & Oates, i, p. 143.

Vernacular names. *Batitchia* (Ceylon).

Description. Forehead, crown and nape dark chocolate-brown, the shafts fulvous; upper plumage dark olive-brown, the tail tipped narrowly with ochraceous, the feathers of the wing-coverts and back with pale shafts, and the edges of the primaries tinged with rufous; lores, sides of the head and neck and whole lower plumage sienna-brown, the sides of the neck and breast with obscure striations on some of the feathers, the striations sometimes obsolete.

Colours of soft parts. Iris light to deep red; eyelid olivaceous; upper mandible deep brown with a pale margin, lower flesh-colour; legs and feet brownish-fleshy; claws pale brownish (*Legge*).

Measurements. Total length about 160 to 170 mm.; wing 66 to 72 mm.; tail about 56 to 61 mm.; tarsus about 26 to 28 mm.; culmen about 16 mm.

Distribution. South and South-West Ceylon.

Nidification. Mr. W. E. Wait describes the nest as similar to that of *Pellorneum ruficeps*, and the eggs also are exactly like rather weakly-marked specimens of that bird's and measure about 22·5×16·3 mm. In one clutch there were three eggs, in the others two only. The breeding season appears to be from November to February.

Habits. Legge describes the habits of this Babbler as much like those of the rest of the family. A shy skulker, frequenting thick cover and feeding on or near the ground. Its note he turns into the syllables "to-meet-you."

(250) Pellorneum fuscicapillum babaulti.

WELLS'S BABBLER.

Scotocichla fuscicapillum babaulti Wells, Bull. B. O. C., xxxix, p. 69 (1919) (Trincomalee).

Vernacular names. *Batitchia* (Ceylon).

Description. Similar to the last but much paler, especially on the lower parts which are brownish buff rather than chestnut. The top of the head is olive-brown instead of blackish.

Colours of soft parts. Iris brownish red; bill brownish flesh; legs and feet flesh-grey (*Babault*).

Measurements. Wing 68 to 74 mm.; tail 57 to 62 mm.; tarsus 28 mm. (*Wells*).

Distribution. North Ceylon.

Nidification unknown.

Habits. This form is purely a dry district form, whereas the last bird inhabits the wet portions of the island.

(251) Pellorneum nigricapitatum.

The Black-capped Babbler.

Brachypteryx nigricapitata Eyton, P. Z. S., 1839, p. 103 (Malaya).
Drymocataphus nigricapitatus. Blanf. & Oates. i, p. 145.

Vernacular names. None recorded.

Description. The lores, a broad supercilium reaching to the nape and the cheeks grey, each feather with a white shaft-stripe; ear-coverts ashy-rufous with whitish shafts; a very narrow moustachial stripe black; forehead, crown and nape black; the whole upper plumage, tail and exposed parts of the wing deep ferruginous brown; chin and throat white; sides of neck and the whole lower plumage ferruginous, brightest on the breast and tinged with brown on the flanks, lower abdomen, vent and under tail-coverts.

Colours of soft parts. Iris rhubarb-red; upper mandible black, lower fleshy-white; legs and feet fleshy-white, slightly tinged with brown or reddish-horny.

Measurements. Total length about 170 to 180 mm.; wing 69 to 72 mm.; tail about 52 to 54 mm.; tarsus about 28 mm.; culmen about 17 mm.

Distribution. Tenasserim and S.W. Siam, down the Malay Peninsula to Sumatra.

Nidification. Davison describes the nest as being built on the ground, of coarse fern roots on a foundation of twigs and leaves. It was placed at the base of a small clump of ferns and contained two eggs. They are described as creamy-white, densely speckled all over with inky-purple and purplish brown. They measure 20·8×15·7 mm.

Habits. The Black-capped Babbler appears to be more essentially a ground bird than any of its relations. Davison says that he *never* found it off the ground, and even when pressed to flight it always alighted again on the ground. It has the same shy, skulking habits of the birds of this and the last genus, and inhabits dense cover, most often in heavy forest. Its note is said to be a single loud call, and it is usually found alone or in pairs *.

* *Drymocataphus rubiginosus* Walden, A. M. N. H. xv, p. 402 (1875) (Karennee) are nothing but young *Pomatorhini* of some kind.

(252) Pellorneum tickelli tickelli.

TICKELL'S BABBLER.

Pellorneum tickelli Blyth, J. A. S. B., xxviii, p. 414 (1859) (Tenasserim).
Drymocataphus tickelli. Blanf. & Oates, i, p. 146.

Vernacular names. *Dao-busha* (Cachari).

Description. Whole upper plumage olive-brown; the forehead more fulvous; the feathers of the crown pale-shafted; tail rather more rufous than the back; lores, eyebrow and

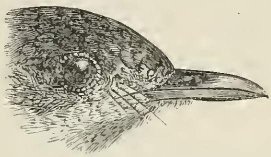


Fig. 44.—Head of *P. t. tickelli.*

feathers round the eye pale fulvous; ear-coverts fulvous-brown with pale shafts; sides of the neck similar to the back but paler; cheeks and entire lower plumage fulvous, with indications of stripes on throat and breast; centre of abdomen and sometimes chin and throat albescent.

Colours of soft parts. Bill bluish or dusky-horny above, paler below and more fleshy; iris reddish brown to Indian red; eyelids livid or dull greenish flesh-colour; legs, feet and claws fleshy-white.

Measurements. Total length about 150 to 160 mm.; wing 60 to 66 mm.; tail 52 to 55 mm.; tarsus about 27 mm.; culmen 17 to 18 mm.

Distribution. Assam South of the Brahmaputra, but not East of the Naga Hills, through West Burma and Karenni to Tenasserim and Malay Peninsula, Siam to Annam.

Nidification. Tickell's Babbler breeds from early April to the end of May and also, possibly a second brood, in late June and July. It may be found at this season at all heights between 3,000 and 7,000 feet, more often over 4,000 feet than under that height. The nest is sometimes globular, frequently a deep cup made principally of fine grasses but with a few leaves, bamboo-spathes or even a scrap or two of dried moss or bracken leaves added to the outer fabric. The lining is always of fine grasses only. It is never placed actually on the ground though often within a few inches of it but is built in some low bush, tangle of creepers or raspberry-vines, or occasionally, in a bamboo clump. Scrub near to openings forms the favourite site, but I have taken nests in fairly deep forest.

The eggs, either three or four in number, are perfect miniatures of the dull-coloured eggs of the Dayal or Magpie-Robin. The ground-colour is a pale greenish grey, and the markings consist of numerous freckles and small blotches of pale reddish brown and secondary markings of lavender and purplish grey, scattered over the whole surface. The texture is fine and close, faintly glossed and the shape is a broad, blunt oval. Two hundred eggs average 20·3 × 15·7 mm.

Habits. Tickell's Babbler is a timid, skulking bird, haunting low brushwood or practically any efficient cover. As a rule all one sees is a small brown object squatting on the ground, which suddenly dives into the nearest bush. They feed much on the ground and are so loath to fly that even trapped birds, when released, flew on to the ground and then made off in long, bounding leaps. The only note I have heard is a soft, rippling "chir-chir."

(253) Pellorneum tickelli assamensis.

AUSTEN'S BABBLER.

Drymocataphus assamensis Sharpe, Cat. B. M., vii, p. 557 (1883) (Dikrang); Blanf. & Oates, i, p. 147.

Vernacular names. None recorded.

Description. Differs from Tickell's Babbler in being a *rufescent* olive-brown above, the crown and mantle more conspicuously white-shafted.

Colours of soft parts as in the last bird.

Measurements. Much the same as in the last. Wing 64 to 67 mm.; tail 50 to 55 mm.

Distribution. Eastern Assam, North and South of the Brahmaputra.

Nidification similar to that of *tickelli*, but a larger assortment of materials are to be found in the nests. The favourite building-sites are in rocky ravines with bush-covered sides, and the nests are often placed actually on the ground. One hundred eggs average 19·9 × 15·7 mm. In colour they are much like those of the last bird but are duller and a series shows a much more olive-grey tint.

Habits. Common all the year round from about 700 feet upwards, otherwise its habits, haunts and food all agree well with those of the last bird. Godwin-Austen records this little Babbler as being very fearless, but those seen by Dr. H. N. Coltart and myself were very shy.

Genus CURSONIA Skinner, 1898.

Oates's name *Gypsophila* being preoccupied, *Cursonia* is the next available and must be used in its place. The genus contains one species only which is in many ways one of the most aberrant

birds in the *Timaliidæ* In general appearance it is much like *Pellorneum*, differing from that genus in having a stronger bill with longer rictal bristles. The upper plumage is squamated, each feather being margined with black. Unlike nearly all the other members of the family, but like *Gampsorhynchus*, the adults in this genus differ from the young in becoming much more white on the head and lower plumage.

In spite of this peculiarity Oates appears to have properly placed it in the *Timaliinæ*, in which I retain it. The wing and tail are about equal in length, the former being short and rounded. The feathers of the forehead are soft and the rictal bristles highly developed; the bill is straight and about as long as hind toe and claw together; the nostrils are exposed and without overhanging hairs.

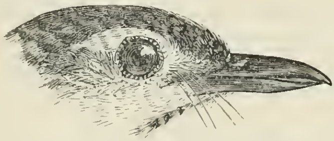


Fig. 45.—Head of *C. crispifrons*.

(254) Cursonia crispifrons.

THE LIME-ROCK BABBLER.

Turdinus crispifrons Blyth, J. A. S. B., xxiv, p. 269 (1855) (Tenasserim).
Gypsophila crispifrons. Blanf. & Oates, i, p. 149.

Vernacular names. None recorded.

Description.—Adult. Whole head, neck and lower plumage pure white; upper plumage olive-brown, the feathers of the back margined with black; each inner secondary of the wing-quills minutely tipped with white.

Colours of soft parts. Iris pale red, red, light red, deep red-brown; upper mandible dark brown, lower pale plumbeous; legs, feet and claws dark purplish green (*Hume Coll.*).

Measurements. Total length about 190 mm.; wing about 78 to 83 mm.; tail about 74 to 77 mm.; tarsus about 28 mm.; culmen about 17 to 19 mm.

Birds of the first year have the forehead to back olive-brown, each feather margined with black; the rump, upper tail-coverts, tail and exposed portions of wing olive-brown; the sides of the forehead and a short supercilium are greyish white with black specks; chin, throat and upper breast white, streaked with dark brown, especially on the breast; remainder of lower plumage ochraceous olive-brown.

Birds in intermediate plumage have the forehead and a varying amount of the sides of the head white; the chin and throat become pure white, and even the upper breast loses many of the streaks.

The adult plumage seems to take some time to acquire, and probably, as in *Gampsorhynchus*, the wholly pure white head and under parts are not acquired until the bird is two years old.

Distribution. The limestone ranges of Tenasserim, such as those at Wimpong, the Toungsha Gyne River and Momenzeik.

Nidification unknown.

Habits. Davison says that they wander about the limestone rocks in pairs, singly or in small parties. They are excessively lively, sprightly birds, keeping up a continuous twittering, chattering note, and occasionally one will perch itself on some point of a rock and, with lowered wings and erected tail, pour forth a fine and powerful song. They feed principally on insects and land-shells, but also in part on seeds. They are not shy and are easy to watch and procure. He observes that this bird is "really a little Thrush."

Genus **TURDINULUS** Hume, 1878.

The genus *Turdinulus* of Hume, with which I unite *Corythocichla*, contains a small group of Babblers which are extraordinarily Wren-like in appearance, habits and even nidification, and at one time I felt convinced that they should be removed *en bloc* to the *Troglodytidæ*. Closely connected, however, with this genus are the birds of the genus *Rimator*, which seems to serve as a connecting link with other forms of *Timaliidæ*. Robinson and Kloss's recently-described *Rimator danjoui* seems to still further strengthen these links and, though with some reluctance, I leave them in this sub-family.

They are all birds with tails very much shorter than the wing; the plumage is soft, lax and squamated; the bill like that of *Drymocataphus* but with longer rictal bristles. The nostrils are exposed and are mere slits with no overhanging membrane. The tarsus is very stout and long and the feet large.

Key to Species and Subspecies.

A. Tail more than half length of wing.
  a. Tips of wing-feathers white.
    a'. Sides of breast and flanks chestnut. [*caudatus*, p. 251.
      a''. Wing 65 mm. or under .... *T. brevicaudatus brevi-*
      b''. Wing over 65 mm. .... *T. b. venningi*, p. 252.
    b'. Sides of breast and flanks reddish brown .... *T. b. striatus*, p. 251.
B. Tail less than half the length of wing.
  b. Feathers of the throat spotted with black.
    c'. Colour brown washed with rufous, [p. 253.
      especially on flanks................ *T. roberti roberti*,

d'. Colour dark brown, flanks dark olive-brown .... *T. r. guttaticollis*, p. 254.
C. Feathers of the throat unspotted.
e'. Sides of breast and flanks rufous-brown *T. epilepidotus davisoni*, [p. 254.
f. Sides of breast and flanks dark olive-brown .... *T. e. bakeri*, p. 255.

(255) Turdinulus brevicaudatus brevicaudatus.

THE SHORT-TAILED WREN-BABBLER.

Turdinus brevicaudatus Blyth, J. A. S. B., xxiv, p. 272 (1855) (Muleyit Mt.).
Corythocichla brevicaudata. Blanf. & Oates, i, p. 148.

Vernacular names. None recorded.

Description. Whole upper plumage and sides of the neck olive-brown, the feathers everywhere margined with black except on the rump and upper tail-coverts: tail rufescent; wings olive-brown, the coverts and all the quills, except the earlier primaries, tipped with a small white spot; lores, a short supercilium, cheeks and under the eye deep ashy; ear-coverts the same, tinged rufescent; chin and throat ashy-white, streaked with dark brown; breast and lower plumage ferruginous, paler on the breast and centre of the abdomen, darker on the flanks, vent and under tail-coverts, the latter tipped paler; centre of abdomen a somewhat creamy tint.

Colours of soft parts. Iris red or cinnamon-red to dark brown; bill above very dark brown, lower mandible paler and more plumbeous; legs, feet and claws pale brown, more or less tinged fleshy.

Measurements. Length about 140 mm.; wing 60 to 65 mm.; tail 42 to 45 mm.; tarsus about 25 mm.; culmen about 16 to 17 mm.

Distribution. The mountains of Tenasserim above 5,000 feet.

Nidification unknown.

Habits. This Babbler appears to be found only in the wooded slopes of the higher hills where there are innumerable rocks and boulders. It may be found either singly or in small parties, is essentially a ground bird, loath to fly, quick on its legs and a great skulker. Davison records its call as a prolonged "kir-r-r."

(256) Turdinulus brevicaudatus striatus.

THE STREAKED WREN-BABBLER.

Turdinus striatus Blyth, J. A. S. B., xxxix, p. 269 (1870) (Khasia Hills).
Corythocichla striata. Blanf. & Oates, i, p. 148.

Vernacular names. *Dao-pufli* (Cachari).

Description. Differs from the Short-tailed Wren-Babbler in

having the sides of the head brown, instead of deep ashy; the breast and lower plumage are brown merely tinged with rufous, and the wing-spots are less conspicuous and fulvous instead of white.

Colours of soft parts. Irides dark red; upper mandible dark brown, lower plumbeous, darkish at the base, paler elsewhere; mouth creamy-slate colour; legs and feet pale fleshy-brown.

Measurements. Length about 130 mm.; wing 56 to 61 mm.; tail about 44 to 46 mm.; tarsus about 24 mm.; culmen about 16 mm.

Distribution. Assam and Manipur. Probably *not* North of the Brahmaputra.

Nidification. This Babbler breeds in May and June at all heights above 4,000 feet, invariably in very rocky ground on steep well-forested hill-sides. In the Khasia Hills it frequents rhododendron forest for breeding purposes, making its deep, cup-shaped or semi-domed nest of dead leaves, fern fronds, grass and moss bound together with roots and tendrils and lined with dead leaves. Although fairly well put together the materials are very rotten and the nest falls to pieces when handled. It is always placed on the ground, generally in some damp situation at the foot of a tree, rock or other cover and so closely resembles the rest of the decaying vegetation round it that is very hard to find.

The eggs number 2 to 4 and are a glossy china-white with rather sparse specks and spots, or small blotches, of reddish and pale pinkish purple. Thirty eggs average 21·3 × 16·0 mm.

Habits. This is one of the most shy birds and though not uncommon in suitable localities is seldom seen and still less often possible to watch. At the slightest sound or movement it slinks away at a great pace on foot and at once becomes invisible, though its low, chirring note may be continued close by until the intruder leaves. It is generally found in pairs but occasionally small family parties may be met with in the cold weather. It is a purely tree-forest bird and never seems to haunt the low scrub-jungle or secondary growth so beloved by many Babblers and, even the forest, to suit it, must be damp and shady and much broken up into rocky ravines and steep slopes. It is found up to the top of the highest hills in S. Assam but in the cold weather may be found down as low as 3,000 feet.

(257) Turdinulus brevicaudatus venningi.

VENNING'S WREN-BABBLER.

Turdinulus brevicaudatus venningi Harington, Bull, B. O. C., xxxix, p. 269 (1870) (Shan States).

Vernacular names. None recorded.

Description. Similar to *T. b. brevicaudatus* but has the upper plumage greyer, the breast and abdomen dark rufous and the flanks dark brown.

Colours of soft parts. Irides red; bill dark brownish-horn, paler beneath; legs and feet fleshy-brown (*Venning*).

Measurements. A larger bird than either of the two other races; wing 65 to 74 mm., average 15 specimens 68 mm.

Distribution. Southern Shan States, Burma and Yunnan.

Nidification. Nothing recorded but I have in my collection eggs of a *Turdinulus* from the S. Shan States which must be of this race. They are exactly like those of *T. b. striatus* already described and measure 21·6 × 16·9 mm.

Habits. Nothing recorded but Rippon obtained it in the Salween Valley between 2,800 and 3,000 feet, a lower elevation than this species usually haunts.

(258) Turdinulus roberti roberti.

AUSTEN'S WREN-BABBLER.

Pnoepyga roberti Godw.-Aust. & Wald., Ibis, 1875, p. 252 (Chaka, Manipur).

Vernacular names. *Dao-mojo gashim, Dao-pufli-kashiba* (Cachari).

Description. Above rich brown, more rufescent on upper tail-coverts; the feathers of head, back and scapulars edged with blackish and with pale greyish centres; lores grey; ear-coverts brown with grey centres; supercilium and patch under ear-coverts rufous, the feathers of the latter with specks at the tips; chin and throat white with black specks forming three distinct lines from chin to breast; breast rather rufous-brown with broad white centres; flanks more rufous with still paler shaft-stripes; centre of abdomen almost white with faint rufous edgings; under tail-coverts the same but darker; wing brown, the outer webs of the quills suffused with dark rufous, greater and median coverts and secondaries with distinct white tips.

Colours of soft parts. Irides red; upper mandible dark plumbeous, tip and lower mandible paler and tipped almost white; legs fleshy-brown, claws paler.

Measurements. Length about 100 mm.; wing 50 to 55 mm.; tail about 18 mm.; tarsus about 18 mm.; culmen 12 to 13 mm.

Distribution. Cachar, Manipur, Naga Hills and Khasia Hills.

Nidification. This little Wren-Babbler breeds freely both in the N. Cachar and Khasia Hills from 4,000 feet upwards from the end of April to the end of June, making a nest an absolute miniature in every way of that of the Short-tailed Babbler. It also places it in precisely the same sort of position and in the same forests.

The eggs number three or four, more often the former, and are like those of *T. b. brevicaudatus* but smaller, not so glossy a white and with more numerous but smaller specks and spots. Forty eggs average 19·3 × 14·8 mm.

Habits. "Wren-Babbler" describes this bird exactly and in all

its ways it is more Wren than Babbler. They haunt dense, dark forest wherever there are openings for streams, pools or natural small glades and they specially affect places strewn with mossy boulders, fallen trees covered with ferns and orchids, old stumps etc. and over these they dodge about and scramble hither and thither just as does our little Wren at home. Sometimes, however, they hop more sedately about amongst the fallen leaves, turning them over for the hidden insects, or they creep through the bracken and scrub more in the manner of a genuine Babbler. Fly they will not, but however hard pressed seek safety on their legs, scuttling away into the undergrowth where they speedily become *non est.* They are, so far as I know, always found in pairs and not in flocks but, as I have seen them principally in the breeding season it may be that they collect in flocks in the winter. Their cry is a rather shrill "chir-r-r" but they have also a rather pleasant but low set of whistling notes. They are extraordinarily tame and, if quiet, one can watch them for a long time without disturbing them.

(259) Turdinulus roberti guttaticollis.

GRANT'S WREN-BABBLER.

Turdinulus guttaticollis Ogilvie-Grant, Ibis, 1895, p. 432 (Miri Hills, Assam).

Vernacular names. None recorded.

Description. Differs from Austen's Wren-Babbler in being darker and browner above; the rufous on the sides of the breast and flanks is wanting and there is but little of this colour on the cheeks.

Colours of soft parts and **Measurements** as in the last race.

Distribution. Hill-ranges of Eastern Assam North and South of the Brahmaputra.

Nidification. Dr. H. N. Coltart and I found Grant's Wren-Babbler breeding in some numbers in the hills and broken ground round about Margherita. It nests from some few hundred feet, or even in the plains (*vide* Stevens), up to 5,000 feet and is an early breeder, most of Dr. Coltart's and my eggs being taken in March and April. Nest and eggs cannot be distinguished from those of *T. r. roberti*. The latter (40) average 19·3 × 14·8 mm.

Habits. Except that this is a bird of lower levels the description of the last bird's habits would suffice for this also.

(260) Turdinulus epilepidotus davisoni.

DAVISON'S WREN-BABBLER.

Turdinulus davisoni O.-Grant, Bull. B. O. C., xxv, p. 97 (1909) (Thoungyah).

Vernacular names. None recorded.

Description. Differs from either of the two preceding birds in

having no black spots on the throat; the under parts are olive-brown, the flanks and sides of the breast more rufous.

Measurements. Wing about 55 to 57 mm.

Distribution. Tenasserim and N. Malay States.

Nidification like that of the last species. Four eggs taken near Perak by Mr. W. A. T. Kellow measure 18·2 × 14·8 mm.

Habits. Those of the genus.

(261) Turdinulus epilepidotus bakeri.

BAKER'S WREN-BABBLER.

Turdinulus epilepidotus bakeri Harington, Bull. B. O. C., xxxiii, p. 94 (1913) (Na Noi, S. Shan States).

Vernacular names. None recorded.

Description. Differs from the last in having the upper parts much darker and the under parts more olive-brown with no rufous on the flanks.

Colours of soft parts and **Measurements** as in Austen's Wren-Babbler.

Distribution. The Southern Shan States and Karenni, Burma.

Nidification similar to that of others of the genus. Three eggs sent me from the S. Shan States measure about 20·5 × 16·8 mm. and are probably greatly above the average in size.

Habits. Those of the genus.

Genus **RIMATOR** Blyth, 1847.

The genus *Rimator* appears to connect to some extent the more Wren-like *Turdinulus* with the true Babblers, both in appearance and habits. It is very like the former in its lax plumage and mottled colouring but its long bill, long in our bird but much longer in others of the genus, seems to link it with the Scimitar-Babblers. It is also much like these birds in its habits.

It differs from *Turdinulus* in its long, slender bill, equal in length to, or much longer than, the head; the culmen is curved downward and the tip only slightly notched. The rictal bristles are short and the nostrils open ovals. The tail is very short and the tarsi and feet very strong and powerful.

(262) Rimator malacoptilus.

THE LONG-BILLED WREN-BABBLER.

Rimator malacoptilus Blyth, J. A. S. B., xvi, p. 155 (1847) (Darjeeling); Blanf. & Oates, i, p. 175.

Vernacular names. *Karriak-tungbrek-pho* (Lepcha); *Dao-mojo-buku-galao* (Cachari).

Description. Forehead, crown, nape, sides of the neck and mantle

dark rufescent brown, with very distinct fulvous shaft-stripes; the feathers of the back with the inner webs black and the outer webs brown and with pale fulvous shafts; rump, upper tail-coverts and tail plain rufescent; wing-coverts and the outer webs of the quills rufous-brown, the former with pale shafts; lores fulvous; ear-coverts rufous-ashy with paler shafts; cheeks mixed black and fulvous, with a black line above; chin fulvous-white; throat, breast and abdomen rufescent brown, with large pale fulvous shaft-streaks; sides of body and thighs plain rufescent brown; vent and under tail-coverts ferruginous.

Colours of soft parts. Iris light red-brown; upper mandible very dark horny, blackish at the base, paler at the tip; gape and edge of lower mandible blackish, remainder pale horny; legs pale livid fleshy with no tinge of red but the tarsi tinted brown, the soles, claw and joints very pale.

Fig. 46.—Head of *R. malacoptilus.*

Measurements. Total length about 125 to 130 mm.; wing 57 to 60 mm.; tail about 25 mm.; tarsus about 23 mm.; culmen about 21 to 24 mm.

Distribution. Sikkim to E. Assam North and South of the Brahmaputra; Manipur and Looshai.

Nidification. This Babbler breeds in the hills both North and South of the Brahmaputra throughout Assam from 4,000 feet upwards, and in the extreme East, nearer the snowy mountains, down to 3,000 feet. It breeds in much the same sort of country as *Turdinulus* but affects more open forest and nests may be found, though rarely, in scrub-jungle or deserted, overgrown, cultivation. The nest is a large domed affair, measuring 8 or 9 inches in height by $5\frac{1}{2}$ to $6\frac{1}{2}$ in breadth, the entrance, which is near the top, measuring about 2 inches across. It is made of dead leaves, bracken fronds, grass, sometimes a little moss, and lined with dead leaves only. It is always placed on the ground and nearly always amongst the roots of bushes or at the foot of some tree. The breeding season lasts from the end of April to July. The eggs are three or four in number, rarely five, pinkish white to pale salmon-pink in ground-colour and marked with spots and small blotches of reddish brown and paler smears of the same with here and there lines and scriggles of deep red-brown. The texture is fragile and practically glossless, the shape an obtuse oval and thirty eggs average in size $21{\cdot}2 \times 15{\cdot}5$ mm.

Habits. In habits this little bird is more of a Babbler and less of

a Wren than those of the preceding genus; it frequents the same kind of forest as *Turdinulus* but may also be found in scrub and deserted clearings. It keeps much to the ground, on which it feeds in the same manner as the Scimitar-Babblers, turning over the leaves and scratching in the mould for insects. It has a sweet, chirping whistle which it utters as a call or when frightened or disturbed. It keeps in pairs, not in flocks, and is wholly insectivorous in its diet.

Genus **HORIZILLAS** Oberholser, 1905.

The genus *Horizillas* is remarkable for its lengthened wings and, in consequence, its comparatively short tail; the plumage is soft and silky. The two Indian species of the genus appear to be more arboreal than any of the preceding genera and to have somewhat the deportment of Bulbuls. The rictal bristles are very conspicuous on account of their length and the bill is short and straight. The legs and feet are weak for *Timaliine* birds. The name *Malacopterum* Eyton is preoccupied as is *Setaria* Blyth *.

Key to Species.

A. Crown bright ferruginous .... *H. magna magna*, p. 257.
B. Crown olive-brown .... *H. magnirostre*, p. 258.

(263) Horizillas magna magna.

THE RED-HEADED TREE-BABBLER.

Malacopterum magnum Eyton, P. Z. S., 1839, p. 103 (Malaya); Blanf. & Oates, i, p. 151.

Vernacular names. None recorded.

Description. Forehead and crown bright ferruginous, the anterior feathers black-shafted and the posterior ones faintly edged with black; lores and a broad supercilium grey, the middle of the feathers whitish; the whole nape black; ear-coverts fulvous-brown with pale shafts; the whole upper plumage fulvous-brown, tinged with ferruginous on the rump, upper tail-coverts and outer webs of the tail-feathers; cheeks mottled grey and white; chin, throat and upper breast white, streaked with grey; remainder of lower plumage greyish white.

Colours of soft parts. Iris sienna-brown (young) to carmine or orange-red; bill dark horny-brown above, lower mandible pale plumbeous white; legs, feet and claws pale plumbeous blue to pale smalt-blue.

Measurements. Length about 170 to 180 mm.; wing about 84 to 94 mm.; tail about 75 mm.; tarsus about 23 mm.; culmen about 20 mm.

* See Oberholser, Smiths. Misc. Coll. 48, p. 64, 1905.

Distribution. Peninsular Burma and Siam and N. Malay Peninsula.

Nidification. Nothing recorded.

Habits. According to Davison this Babbler is almost entirely arboreal, hunting about in trees and bushes in small parties or in pairs and never descending to the ground. It is said to be a purely forest bird and to be entirely insectivorous in its diet.

(264) Horizillas magnirostre.

THE BROWN-HEADED TREE-BABBLER.

Alcippe magnirostre Moore, P. Z. S., 1854, p. 277 (Malacca).
Malacopterum magnirostre. Blanf. & Oates, i, p. 151.

Vernacular names. None recorded.

Description. Forehead, crown, nape and back olive-brown, the feathers of the forehead with black shafts; wing-coverts and exposed parts of quills rufescent olive; upper tail-coverts and tail bright chestnut-brown; feathers round the eye white; lores and an obsolete stripe over the eye grey; cheeks and ear-coverts deep ashy, the latter with paler shafts; entire lower plumage dull white, washed with ashy on breast, flanks, thighs and under tail-coverts.

Colours of soft parts. Iris cinnabar-red to lake; bill, legs and feet as in the last bird but less blue.

Measurements. Length about 160 to 170 mm.; wing 80 to 85 mm.; tail about 55 to 57 mm.; tarsus about 21 mm.; culmen about 15 to 16 mm.

Distribution. Extreme South of Tenasserim, extending South down the Malay Peninsula and East to Cochin China.

Nidification. Nothing recorded. Two eggs from the Waterstradt collection, said to have been taken on 14. 2. 1901 in East Malacca, are very pale yellow-creamy white with a few specks of light red principally in the centre of the egg-shell. In shape they are almost ellipses, with fine, close texture but almost glossless. They measure 21·8 × 16·0 and 21·3 × 15·5.

Habits. As far as is known similar to those of the last bird.

Genus ERYTHROCICHLA Sharpe, 1883.

This genus is very close to the last but differs in its shorter wing and it is apparently a ground bird.

(265) Erythrocichla bicolor.

THE FERRUGINOUS BABBLER.

Brachypteryx bicolor Less., Rev. Zool., 1839, p. 138 (Sumatra).
Erythrocichla bicolor. Blanf. & Oates, i, p. 152.

Vernacular names. None recorded.

Description. Whole upper plumage ferruginous, the crown and

sides of the head brighter; upper tail-coverts and tail chestnut; lores dull white or pale fulvous; lower plumage white suffused with brownish on the breast and less so on the sides of the body.

Colours of soft parts. Iris pale wood-brown; upper mandible dirty white, lower mandible dark brown; legs and feet fleshy-white.

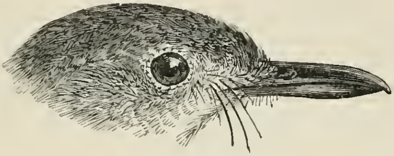


Fig. 47.—Head of *E. bicolor*.

Measurements. Total length about 160 to 170 mm.; wing 72 to 82 mm.; tail about 60 to 63 mm.; tarsus about 28 mm.; culmen 18 to 20 mm.

Distribution. Tenasserim South through the Malay Peninsula to Borneo and Sumatra.

Nidification unknown.

Habits. Said by Davison to be entirely a ground bird, only flying up into the bushes and trees when disturbed.

Genus **ÆTHOSTOMA** Sharpe, 1902.

The name *Trichostoma* being already occupied, Sharpe's *Æthostoma* is the earliest available for this genus. It differs from the last genus in having remarkably long rictal bristles and a very short tail.

(266) Æthostoma rostrata.

BLYTH'S BABBLER.

Trichostoma rostrata Blyth, J. A. S. B., xi, p. 795 (1842) (Malaya); Blanf. & Oates, i, p. 153.

Vernacular names. None recorded.

Description. Whole upper plumage and wings rufescent olive-brown, tinged with rufescent on the upper tail-coverts and outer webs of tail-feathers; lores whitish mottled with black; ear-coverts and round the eye rufescent, the former with whitish shafts; cheeks white with black shafts and tips; entire lower plumage white, washed with pale grey across the breast and suffused with ashy-brown on the sides of the breast and abdomen.

Colours of soft parts. Iris pale red-brown; upper mandible dark horn-brown, lower pale plumbeous blue; legs and feet rather dark pinkish-fleshy; claws pale horny-brown (*Davison*).

Measurements. Total length about 160 to 170 mm.; wing 70 to 75 mm.; tail about 52 to 54 mm.; tarsus about 26 mm.; culmen about 18 to 20 mm.

Distribution. The extreme South of Tenasserim, extending down the Malay Peninsula to Sumatra and Borneo.

Nidification and Habits. Nothing recorded beyond the fact that Hume asserts it is arboreal.

Genus **MALACOCINCLA** Büttik., 1895.

The genus *Malacocincla* differs from all the other genera of this subfamily with stout straight bills in having the nostrils oval and exposed, with no protecting membrane. The rictal bristles are well developed but there are no hairs overhanging the nostrils. The tail is shorter than the wing. The name *Turdinus* being preoccupied, the above takes its place.

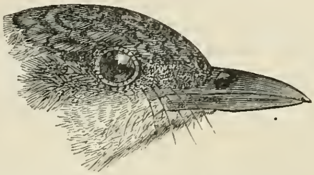


Fig. 48.—Head of *M. s. abbotti.*

(267) Malacocincla sepiaria abbotti.

ABBOTT'S BABBLER.

Malacocincla abbotti Blyth, J. A. S. B., xiv, p. 601 (1845) (Ramree, Arrakan).
Turdinus abbotti. Blanf. & Oates, i, p. 154.

Vernacular names. None recorded.

Description. Whole upper plumage rich olive-brown, the forehead with fulvous streaks, the other feathers with pale shafts; exposed parts of wing-quills like the back; upper tail-coverts and tail deep rufous; lores round the eye and a short supercilium dark grey; ear-coverts rufous with fulvous shafts; chin, throat and cheeks pale grey; sides of neck, breast and body earthy ferruginous, centre of breast and abdomen whitish; under tail-coverts bright ferruginous.

Colours of soft parts. Iris light reddish brown to red; eyelids plumbeous; upper mandible dark horny-brown, tip and lower mandible pale horny or bluish-horny; legs and feet pale fleshy, claws pale horny.

Measurements. Total length about 180 mm.; wing 74 to 77 mm.; tail about 50 to 52 mm.; tarsus about 25 mm.; culmen about 18 mm.

Distribution. Nepal, Sikkim, E. Bengal, Assam, Burma to the Malay Peninsula, and Siam.

MALACOCINCLA ABBOTTI.
Abbotts Babbler.
3/4 life size

Nidification. In India this bird breeds in April and May and sometimes in June, whilst in Burma its nest has been found from February to May. It breeds only in deep, wet tree-forest with ample undergrowth and preferably near some stream, making a massive nest of dead leaves, weeds and grass with an inner cup of leaves, roots and weeds compactly bound together and lined with roots. It may be placed in a clump of weeds, a low bush or in some fern-palm near the ground. The eggs number three to five and are very beautiful; the ground-colour varies from a very pale to a rich pale salmon-pink, whilst the markings consist of spots, blotches and lines of deep red-brown with paler spots of light red and neutral tint. In shape they are normal ovals and the texture is fine with a good gloss. They measure about $22{\cdot}2 \times 16{\cdot}5$ mm. but vary greatly in size.

Habits. Abbott's Babbler is a bird of the plains and the foothills, rarely being found much over 2,000 feet. It haunts deep forest where it is always humid and green and where the trees have an ample undergrowth of plants, weeds and bushes. In N. Cachar it was always to be found near rivers and streams and it is very partial to places where palm-ferns grow in great luxuriance. They have a pleasant whistling note but are very silent birds, creeping about in the dense undergrowth very quietly and stealthily. They are apparently entirely insectivorous.

Genus **THRINGORHINA** Oates, 1889.

The genus *Thringorhina* contains four species of peculiar coloration characterized by the very large operculum over the nostrils. The bill is very strong, with the culmen curved gently

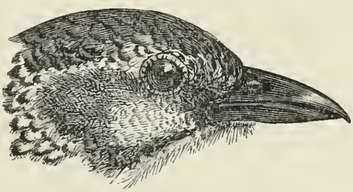


Fig. 49.—Head of *T. guttata.*

throughout, and the rictal bristles are weak. The feathers of the forehead are harsh to the touch and those of the crown ample and erectile, possibly forming a short crest in life. This genus is very close to *Stachyris* and like that genus the birds contained in it all lay pure white eggs.

Key to Species.

A. Wings and tail barred with brown........ *T. oglei*, p. 262.
B. Wings and tail plain.................. *T. guttata*, p. 262.

(268) Thringorhina oglei.

AUSTEN'S SPOTTED BABBLER.

Actinura oglei Godw.-Aust., J. A. S. B., xlvi (2) p. 42 (1877) (Sadiya).
Thringorhina oglii. Blanf. & Oates, i, p. 156.

Vernacular names. *Chum-pitti* (Trans-Dikku Nagas).

Description. Crown, nape and hind neck rich golden-brown; back, rump and upper tail-coverts the same but duller and obsoletely cross-rayed; wing and tail umber-brown, narrowly and closely cross-barred with a darker shade of the same; forehead and broad supercilium white, the former with black shafts; on the sides of the neck the supercilium breaks up into white spots bordered with black; forehead and supercilium also bordered above with black; lores and ear-coverts black; cheeks, chin and throat white; breast grey; remainder of lower plumage dull umber-brown.

Colours of soft parts. Iris crimson-lake; bill black above, grey on lower mandible; legs and feet umber-brown.

Measurements. Total length about 180· mm.; wing 68 to 76 mm.; tail about 53 mm.; tarsus about 27 mm.; culmen about 16·5 to 17·5 mm.

Distribution. Eastern Assam North and South of the Brahmaputra.

Nidification. This bird, together with its nest and eggs, were brought in by Nagas on several occasions to Dr. H. N. Coltart and myself at Margherita. The remains of the nest seemed to be those of large globular affairs made of bamboo leaves and grass with a mixture of roots, small twigs and dead leaves and according to the Nagas was always placed on the ground in ravines in heavy forest with plenty of undergrowth. The eggs, three or four in number, are pure white and very like those of Scimitar-Babblers but more fragile and without gloss. They measure about 22·5 × 17·0 mm.

The breeding season is May and June.

Habits. Beyond the fact that this Babbler haunts thick, moist forests at elevations from 6,000 feet upwards, we know little of their habits. According to the Nagas they keep much to the heaviest undergrowth and are silent, skulking birds. Those we examined had eaten insects only.

(269) Thringorhina guttata.

TICKELL'S SPOTTED BABBLER.

Turdinus guttatus Blyth, J. A. S. B., xxvii, p. 414 (1859) (Muleyit Mt.).
Thringorhina guttata. Blanf. & Oates, i, p. 155.

Vernacular names. None recorded.

Description. Lores and forehead white with black streaks;

round the eye black; a large patch of white below the eye; bounded by a black moustachial streak; ear-coverts ashy-brown; a white supercilium to the nape bordered above by black; sides of neck and terminal portions of the mantle feathers black with long, white, oval drops; remaining upper plumage rich golden-brown, the rump, tail and the outer webs of the wing-quills tinged with deep rufous; chin and upper throat white; remainder of lower parts ruddy ferruginous, the flanks and under tail-coverts tinged with olivaceous, the breast with very narrow white margins to the feathers, which, with those of the abdomen, have also whitish shafts.

Colours of soft parts. Iris crimson-lake; bill black, lower mandible and commissure plumbeous; legs and feet pale dingy green (*Hume & Davison*).

Measurements. Total length about 180 mm.; wing 66 to 69 mm.; tail about 56 to 58 mm.; tarsus about 25 mm.; culmen about 17 to 18 mm.

Distribution. The mountains of Peninsular Burma and Siam. It has been obtained on Muleyit, on the Thaungyin River, at Malewun in the extreme south of Tenasserim and in Kao Nawng and Trang in Siam.

Nidification unknown.

Habits. According to Davison, Tickell's Spotted Babbler is found in small parties haunting jungle, both forest- and more open bamboo-jungle, in the lower hills. For the most part it keeps to the undergrowth but he never saw it actually on the ground, whereas the Nagas describe the last bird as frequenty hunting for food amongst the fallen leaves.

Genus **STACHYRIS** Hodgson, 1844.

This genus is very close indeed to the last, differing principally in its smaller, more pointed, bill, which has, however, the culmen gently curved throughout in the same manner.

Key to Species and Subspecies.

A. Crown black streaked with white.
- *a*. Throat blackish grey, mottled white — *S. nigriceps nigriceps*, p. 264.
- *b*. Throat deep grey or black .... — *S. n. coltarti*, p. 265.
- *c*. Throat ashy-grey .... — *S. n. davisoni*, p. 265.

B. Crown golden-yellow streaked with black.
- *d*. A black streak through eye.
  - *a'*. Upper parts olive-yellow ...... — *S. chrysæa chrysæa*, p. 265.
  - *b'*. Upper parts dark olive-green.
    - *a''*. Under parts bright yellow .. — *S. c. assimilis*, p. 267.
    - *b''*. Under parts dull yellow .... — *S. c. chrysops*, p. 267.
- *e*. No black streak through eye ...... — *S. c. binghami*, p. 266.

(270) Stachyris nigriceps nigriceps.

THE BLACK-THROATED BABBLER.

Stachyris nigriceps Hodgs., Blyth, J. A. S. B., xiii, p. 378 (1884) (Nepal); Blanf. & Oates, i, p. 162.

Vernacular names. *Sangriam-pho* (Lepcha).

Description. Forehead, crown and nape black; the feathers edged with white, giving a streaked appearance to these parts; round the eye white; ear-coverts golden-brown; cheeks white; a conspicuous deep brown or black supercilium; chin and throat deep blackish grey, the feathers edged with white; whole upper plumage rich olive-brown, the quills of wings and tail edged rufous; lower plumage bright fulvous, the flanks, abdomen and under tail-coverts tinged with olivaceous.

Fig. 50.—Head of *S. n. nigriceps.*

Colours of soft parts. Iris reddish- or orange-brown; eyelids slaty; bill horny-brown, the lower mandible fleshy-horny in winter; in summer the bill becomes much darker, blackish-horny above and slaty below; legs and feet fleshy-brown, greenish brown or more rarely yellowish.

Measurements. Total length about, 140 mm.; wing 58 to 62 mm.; tail about 55 mm.; tarsus about 21 mm.; culmen about 15 mm.

Distribution. Nepal, Sikkim and hills North of the Brahmaputra to the Miri Hills.

Nidification. The Black-throated Babbler breeds in May and June at all elevations from a few hundred feet up to at least 10,000, making a cup-shaped or domed nest of bamboo leaves and pieces of bracken, mixed and lined with grass. It measures 6″ to 8″ in height by some 4″ to 6″ in breadth and is always placed on the ground but generally on a bank so that it keeps well drained. It may be situated in almost any kind of cover. The eggs are pure white, broad, blunt ovals, they are stout in texture and have a fair gloss and number four or, more rarely, three. Fifty eggs average $19{\cdot}2 \times 14{\cdot}7$ mm.

Habits. This is a typical little Babbler in its habits, skulking about in thick undergrowth, in bamboo-jungle or mixed scrub and grass. It is found in small parties in winter which keep close together, seldom uttering any call beyond an occasional sweet, low

whistle. It is purely insectivorous, finding its food in the lower cover and but seldom descending to the ground.

(271) Stachyris nigriceps coltarti.

THE ASSAM BLACK-THROATED BABBLER.

Stachyris nigriceps coltarti Harington, Bull. B. O. C., xxxiii, p. 61 (1913) (Margherita).

Vernacular names. *Dao-riaphong* (Cachari).

Description. Differs from *S. n. nigriceps* in having no white edges to the feathers of the chin and throat.

Colours of soft parts and **Measurements** as in that bird.

Distribution. Assam south of the Brahmaputra, Western Burma and Bhamo Hills, South to Tenasserim but not including that state. Birds from the Southern Shan States are intermediate between this and the next form but nearer the latter.

Nidification and **Habits** as in the Sikkim bird but keeping to lower levels. It is more common below 3,000 feet than above this height. Two hundred eggs average 19·1 × 14·7 mm.

(272) Stachyris nigriceps davisoni.

THE MALAY GREY-THROATED BABBLER.

Stachyris davisoni Sharpe, Bull. B. O. C., i, p. 7 (1892) (Pahang).

Vernacular names. None recorded.

Description. Differs from the two preceding forms in having the throat ashy-grey; the ear-coverts are hair-brown and the upper plumage is suffused with rufous.

Colours of soft parts and **Measurements** as in *S. n. nigriceps*.

Distribution. S. Tenasserim, Peninsular Siam and Malay Peninsula. Birds from the Eastern Burmese hills as far North as Karenni are also of this race as are those from the Shan States.

Nidification and **Habits** differ in no way from those of the preceding forms. The eggs average about 19·2 × 14·8 mm.

(273) Stachyris chrysæa chrysæa.

THE NEPAL GOLDEN-HEADED BABBLER.

Stachyris chrysæa Blyth, J. A. S. B., xiii, p. 379 (1844) (Nepal); Blanf. & Oates, i, p. 163.

Vernacular names. *Syak-birang-pho* (Lepcha).

Description. Forehead golden-yellow; crown and nape the same streaked with black; lores and a short moustachial streak black; ear-coverts oil-yellow; upper parts, sides of neck and exposed parts of wings bright olive-yellow; tail brown washed with yellow on the outer webs; entire lower plumage bright yellow.

Colours of soft parts. Iris golden-brown or light brown; bill dark slaty-horn above, paler below; legs and feet pale yellowish-brown to greenish-brown.

Measurements. Total length about 112 to 115 mm.; wing about 48 to 51 mm.; tail about 50 mm.; tarsus about 18 to 19 mm.; culmen about 12 mm.

Distribution. Nepal, Sikkim to Assam, N. Chin Hills and Manipur to Kachin Hills.

Nidification. This pretty little Babbler makes a nest which is a small, neat facsimile of that of the last species but which is sometimes placed in bushes or, more often, bamboo clumps a few inches to a couple of feet from the ground. It is generally domed but cup-shaped nests may be found when placed in positions where there is cover overhead as in a thick clump of bamboo. It breeds principally above 3,000 feet during May, June and July, laying four eggs which are normally pure white but rarely a faintly spotted egg may be found somewhat like those of the next genus. The surface is close and has a fair gloss and the shell is comparatively harder than that of the Black-throated Babbler. Sixty eggs average 15·4 × 12·1 mm.

Habits. The Golden-headed Babbler collects in the winter in quite large flocks numbering sometimes as many as 40. They keep to the bushes and undergrowth in damp tree-forest, seldom if ever descending to the ground but perpetually on the move on wing or feet as they scramble or flit from one twig to another in search of their insect food. The entire time the whole flock keeps up a constant soft, low twittering which rises to shriller and louder notes of expostulation when disturbed. They do not mind being watched and I have often sat for some minutes within a few feet of a flock before they took their departure. In the breeding season the flocks break up and the birds frequent bamboo and secondary jungle as well as forest. It is found up to at least 6,000 feet.

(274) Stachyris chrysæa binghami.

The Chin Hills Golden-headed Babbler.

Stachyris binghami Rippon, Bull. B. O. C., xiv, p. 84 (1904) (Mt. Victoria).

Vernacular names. None recorded.

Description. Differs from the last bird in having the upper parts ashy olive-green; the lower parts dull orange-yellow and the ear-coverts slaty-green.

Colours of soft parts and **Measurements** as in the last bird.

Distribution. Central and S. Chin Hills and N. Arrakan.

Nidification unknown.

Habits not recorded.

(275) Stachyris chrysæa assimilis.

The Burmese Golden-headed Babbler.

Stachyris assimilis Walden, Blyth's B. of B., p. 116 (1895) (Karennee); Blanf. & Oates, i, p. 163.

Vernacular names. None recorded.

Description. Similar to the last bird but without any black eye-streak; both upper and lower plumage rather duller, below more yellow, less orange.

Colours of soft parts. Iris deep red-brown or lake; bill lavender-grey, pinker at the base and on lower mandible; in some specimens dark horny-brown, probably in breeding season; legs yellowish brown to greenish brown. Wardlaw-Ramsay records one male as having black irides.

Measurements as in the others.

Distribution. S. Shan States and Karenni and probably all the hill-ranges of East Central Burma.

Nidification and Habits similar to those of the Assam bird. Three eggs sent me from the South Shan States measure about 15·3 × 12·0 mm.

(276) Stachyris chrysæa chrysops.

The Malayan Golden-headed Babbler.

Stachyris chrysæa chrysops Richmond, Proc. Biol. Soc. Wash., xv, p 157 (1902) (Trang, Lower Siam).

Vernacular names. None recorded.

Description. This race has a black eye-streak like the Northern Indian form and has the under parts fairly bright yellow but rather less so than in the typical bird; the upper parts are the same as in *assimilis.*

Colours of soft parts and Measurements as in *assimilis.*

Distribution. Peninsular Burma and Assam and Malay Peninsula. The specimens in the British Museum collection from Tenasserim seem referable to this race.

Nidification and Habits not recorded.

Genus STACHYRIDOPSIS Sharpe, 1883.

This genus differs from the last in having the culmen perfectly straight. It seems to be a form intermediate between *Stachyris* and *Mixornis* and then leading into *Alcippe.* In the genus *Mixornis*, however, the nostrils are oval and exposed whereas in *Stachyridopsis* they are covered with a membrane somewhat as in the two preceding genera.

Key to Species and Subspecies.

A. Fore crown rufous to chestnut; bill not red.
  a. Throat yellowish. [p. 268.
    a'. Rufous of crown extending to nape .. *S. ruficeps ruficeps,*
    b'. Rufous of crown confined to that part .... *S. r. bhamoensis*, p. 269.
  b. Throat whitish.
    c'. Lores almost white; fore crown dull rufous .... *S. r. rufifrons*, p. 269.
    d'. Lores yellow; fore crown bright rufous .... *S. r. ambigua*, p. 270.
B. Fore crown fulvous; bill red .... *S. pyrrhops*, p. 271.

(277) Stachyridopsis ruficeps ruficeps.

THE RED-HEADED BABBLER.

Stachyridopsis ruficeps Blyth, J. A. S. B., xvi, p. 452 (1847) (Darjeeling); Blanf. & Oates, i. p. 164.

Vernacular names. *Syak-birang-pho* (Lepcha).

Description. Forehead, crown and nape bright chestnut, the forehead with obsolete dark shaft-stripes; lores bright yellow; upper plumage, tail and exposed parts of wings olive-brown, tinged rufous; chin and upper throat pale yellow with conspicuous black shafts; sides of the head and neck and entire lower plumage fulvous yellow; the sides of the body, thighs, vent and under tail-coverts tinged with olivaceous.

Colours of soft parts. Iris golden-brown, red-brown or crimson; bill bluish plumbeous, darker above, paler and rather fleshy below; legs pale yellowish- or fleshy-brown.

Measurements. Total length about 120 to 125 mm.; wing 54 to 58 mm.; tail about 50 to 52 mm.; tarsus about 17 to 18 mm.; culmen about 10 mm.

Distribution. Sikkim and hills North of the Brahmaputra. Khasia and N. Cachar Hills. Annam (*Robinson & Kloss*). It must also occur in the intervening countries in extreme N. Burma but so far has not been recorded thence.

Nidification. This little Babbler breeds in Sikkim from 3,000 feet upwards and in the Assam Hills from 2,500 feet, commencing in early April and continuing until the end of June. The nest is a small, rather neatly made egg-shaped structure with the entrance at the top, or small end; outwardly it is composed of dead bamboo leaves but inside is more or less mixed with roots and fibrous material and generally lined with fine roots. The site selected is either a mass of twigs low down in a bamboo clump or some thick bush; rarely it is placed actually on the ground. The eggs, four in number, have a pearly white ground with faint specks and small blotches, generally disposed as a ring round the larger end and sparse or absent elsewhere. A few eggs may be found which are pure white and equally seldom a clutch comparatively boldly marked. The shape is a short, broad oval, the texture stout and glossy. Thirty eggs average about 15·8 × 12·4 mm.

Habits. In winter the Red-headed Babbler may be found anywhere between the foot-hills and 6,000 feet or even higher, frequenting fairly thick undergrowth, scrub- or bamboo-jungle. It consorts in small flocks and feeds low down in whatever cover it may happen to be in, but does not descend to the ground. Its note is a soft, low whistle, seldom used, and a little chattering twitter occasionally uttered as the birds flit about the bushes.

(278) Stachyridopsis ruficeps bhamoensis.

The Bhamo Red-headed Babbler.

Stachyridopsis ruficeps bhamoensis Harington, A. M. N. H., ii, p. 245 (1908) (Bhamo Hills).

Vernacular names. None recorded.

Description. Differs from the last in having the light chestnut of the head confined to the crown; the throat and lower parts are a more greyish-yellow. From *S. r. sinensis*, the Chinese form, it differs in having black streaks to the feathers of the forehead and a much more massive bill.

Colours of soft parts like those of the last bird.

Measurements. A trifle smaller than *S. r. ruficeps*, wing about 52 to 56 mm.

Distribution. The Bhamo Hill Tracts and S. Shan States.

Nidification. "A very noisy little bird in the breeding season, drawing attention to itself if anyone invades its particular bit of jungle. It builds an untidy, retort-shaped nest entirely of bamboo leaves, which it places in clumps of long, overhanging grass. It is always well concealed and can only be found by seeing the bird fly out." (*Harington.*)

The eggs, three or four in number, are indistinguishable from those of the last bird. Thirty eggs average 16·3 × 12·7 mm. A good many odd eggs of this bird are pure unspotted white and two clutches taken by Mr. F. Grant are all without any markings.

Habits similar to those of the last bird.

(279) Stachyridopsis rufifrons rufifrons

Hume's Babbler.

Stachyris rufifrons Hume, S. F., i, p. 479 (1873) (Pegu).
Stachyrhidopsis rufifrons. Blanf. & Oates, i, p. 165.

Vernacular names. None recorded.

Description. This species differs from the last in having the rufous of the head much duller and confined to the anterior crown; the upper plumage is more grey. In *S. r. rufifrons* the striæ both on head and throat are inconspicuous or obsolete and the chin itself is white; the lower plumage is a tawny buff.

Colours of soft parts. Iris deep red; bill bluish plumbeous-black (*Harington*); legs and feet pale fleshy-horn.

Measurements. Total length about 115 to 120 mm.; wing 50 to 53 mm.; tail about 48 mm.; tarsus about 18 mm.; culmen about 10 mm.

Distribution. Shan States to Tenasserim, Burma, North-East Siam *.

Nidification not recorded.

Habits. Apparently those of the next race. A low-level bird found from the plains up to 3,000 feet or so and haunting both dense forest and the more open bamboo-, grass- and scrub-jungles.

(280) Stachyridopsis rufifrons ambigua.

HARINGTON'S RED-FRONTED BABBLER.

Stachyrhidopsis rufifrons ambigua Harington, J. B. N. H. S., xxiii, p. 631 (1915) (Gunjong, N. Cachar).

Vernacular names. *Dao-pere-gajao* (Cachari).

Description. Differs from the last bird in having the white of the throat grading into the fulvous of the lower plumage. The black shaft-stripes on the crown and nape are very conspicuous and the upper plumage is less grey and more olive-green; the flanks and thighs are strongly washed with olive-brown.

Colours of soft parts. Irides reddish brown; bill slaty-blue; legs and feet pale yellowish brown, claws darker.

Measurements. Total length 115 to 120 mm.; wing 48 to 53 mm.; tail 46 to 48 mm.; tarsus about 17 to 18 mm.; culmen 9 to 10 mm.

Distribution. Sikkim, Assam North and South of the Brahmaputra, Manipur.

Nidification. The breeding season of Harington's Red-fronted Babbler commences in the end of March in the plains to the end of June or even July in the hills. It breeds everywhere up to 2,000 feet and occasionally higher than this and nests of both *ruficeps* and *ambigua* may be found in the same jungle. Nest and eggs are quite indistiguishable from those of the Red-headed Babbler and, as with that bird's eggs, pure white ones may sometimes be taken of this bird. One hundred eggs average 16·1 × 12·4 mm.

Habits. This species differs from the last in being a bird of much lower levels. It extends well into the plains and is more plentiful below 2,000 feet than over this height, though it wanders frequently as high as 3,000 feet or a little over. It is more a bird of comparatively open bamboo- and scrub-jungle, grass-lands and thin deciduous forest than of the deep evergreen forests, though it will be found in these also. It is a companionable, cheery little bird, collecting in quite big flocks and having much the same manners, voice and diet as the Golden-headed Babblers.

* Specimens from S.W. Siam have been separated by me under the name *S. r. obscura* and this form may possibly be found in extreme S.E. Tenasserim.

(281) Stachyridopsis pyrrhops.

THE RED-BILLED BABBLER.

Stachyris pyrrhops Blyth, J. A. S. B., xiii, p. 379 (1844) (Nepal).
Stachyrhidopsis pyrrhops. Blanf. & Oates, i, p. 165.

Vernacular names. None recorded.

Description. Forehead and anterior half of crown fulvous, blending into the olive-brown of the upper plumage; the feathers of the forehead, crown and mantle dark-shafted; lores and chin black, the lower portion of the latter barred with white; sides of the head fulvous; lower plumage rather brighter fulvous; the sides of the body, flanks, thighs and under tail-coverts tinged with olivaceous.

Colours of soft parts. Iris red to blood-red; upper mandible brown, sometimes, probably in the breeding season, tinged with red, lower mandible fleshy-pink, reddish-fleshy or fleshy tinged with slate; legs, feet and claws pale brownish-fleshy.

Measurements. Total length about 120 mm.; wing 50 to 53 mm.; tail about 55 mm.; tarsus about 18 mm.; culmen about 10 to 11 mm.

Distribution. Himalayas, from Murree to Nepal.

Nidification. The Red-billed Babbler breeds from 3,000 to 6,000 feet or higher in Kashmir, making a nest of grass and reed leaves, either cup-shaped, semi-domed or completely covered in. It is nearly always placed low down in bushes in scrub-land or more or less open forest. The eggs are like those of the rest of the genus, three or four in number and measure on an average about 16·5 × 13·0 mm. The breeding season is from the middle of April to the end of June.

Habits. These appear to be much the same as those of the last bird but they are never found below 3,000 feet and between 4,000 and 6,000 feet is their more usual elevation. They are said in winter to mix much with flocks of other birds and to have "a clear and musical note like the ringing of a tiny bell."

Genus CYANODERMA Salvadori, 1874.

This genus differs from the two preceding in having the orbits naked and of a bright colour in life. The bill has the culmen straight on the basal half and slightly curved on its terminal half.

(282) Cyanoderma erythroptera erythroptera.

THE RED-WINGED BABBLER.

Timalia erythroptera Blyth, J. A. S. B., xi, p. 794 (1842) (Malay).
Cyanoderma erythropterum. Blanf. & Oates, i, p. 166.

Vernacular names. None recorded.

Description. Forehead, supercilium, ear-coverts, sides of the head and neck, chin, throat and breast clear plumbeous; abdomen, flanks, vent and under tail-coverts fulvous-brown; upper plumage rufescent brown; wings and tail bright ferruginous.

Colours of soft parts. Iris madder-red to deep brown; orbital skin light to dull smalt blue; bill dark plumbeous or brownish blue, lower mandible paler; legs, feet and claws very pale greenish or yellowish white.

Measurements. Total length about 140 mm.; wing 56 to 60 mm; tail about 50 mm.; tarsus about 20 mm.; culmen about 13 to 14 mm.

Distribution. From the extreme South of Tenasserim down the Malay Peninsula to Borneo and Sumatra.

Nidification. Nests taken by Davison and others in March and April are described as balls of grass or reed-leaves about 6 inches in diameter and placed in bushes. The eggs, two or three in number, are glossy china-white spotted with reddish all over but most numerously at the larger end. In shape they are obtuse ovals. Five eggs in my collection average about $16{\cdot}9 \times 13{\cdot}6$ mm.

Eggs taken by Messrs. Hopwood and Mackenzie are described as unspotted white with a bluish tinge.

Habits. Said to be very common in the evergreen parts of Tenasserim and the Malay Peninsula, haunting brushwood, small trees and cane-brakes in parties, working the foliage for insects much like a Titmouse and uttering a "sharp, metallic rolling sound, which it utters chiefly when alarmed, but also at other times" (*Davison*).

Genus **MIXORNIS** Hodgson, 1842.

The genus *Mixornis* differs from all other genera of slender-billed *Timaliinæ* in having the nostrils oval, exposed and not covered by a membrane, or scale, as in the others. Within Indian and Burmese limits we have but one species which varies considerably in different countries, forming subspecies or geographical races which are not always easy to define.

Mixornis rubricapilla.

Key to Subspecies.

A. Crown pale ferruginous, stripes on fore-neck and breast fairly well developed .. *M. r. rubricapilla*, p. 273.
B. Crown more pale brown, less ferruginous, stripes on fore-neck and breast very fine. *M. r. minor*, p. 274.
C. Crown more chestnut-rufous, stripes on fore-neck and breast decidedly heavier.. *M. r. pileata*, p. 274.

Having examined several hundred specimens of this little bird in the British Museum and Tring Museum as well as those in the Indian Museum and my own collection, I have come to the conclusion that we cannot recognize more than three races of *Mixornis* as coming within the limits of this work. Rippon's *sulphurea* is an exact replica of many Assam and Bengal birds and the Southern Shan States appears to be about the limit of this form. Northern Siam specimens, from which Gyldenstolpe names his *M. minor*, are certainly nearer South and Central Siam forms, as also are specimens from East Central Burma, so all these birds must bear his name.

Kloss's *connectens* I cannot separate from *pileata* the South Malay form and his name therefore becomes a synonym of that bird. Variation *inter se* is so great in the birds of this species that it is quite unsafe to found geographical races on anything but very large series.

Fig. 51.—Head of *M. r. rubricapilla.*

(283) Mixornis rubricapilla rubricapilla.

THE YELLOW-BREASTED BABBLER.

Motacilla rubricapilla Tickell, J. A. S. B., ii, p. 576 (1833) (Manbhum).
Mixornis ruficapilla. Blanf. & Oates, i, p. 167.

Vernacular names. *Dao-péré gatang-lili* (Cachari).

Description. Crown pale ferruginous blending on the neck into the olive-green of the upper plumage and sides of neck; supercilium, lores and front of forehead yellow, the two latter with black shafts; ear-coverts dull yellow with pale shafts; cheek, chin, throat and upper breast yellow with black shaft-lines; centre of breast and abdomen plain yellow; remainder of lower plumage dull ashy-yellow.

Colours of soft parts. Iris white or pale yellow to yellow-ochre; eyelids pale slate-colour; bill horny-brown or slate-brown, the culmen almost black and the lower mandible paler; legs olive-or brownish-fleshy, the claws yellower.

Measurements. Total length about 125 mm.; wing 53 to 58 mm.; tail about 52 to 54 mm.; tarsus about 18 mm.; culmen 10 to 11 mm.

Distribution. Sikkim and Eastern Bengal to Assam and East to Chin, Kachin and Shan States; South to Arrakan and N. Tenasserim.

Nidification. The Yellow-breasted Babbler breeds during April, May and June and sometimes into July at heights up to 2,500 feet or more and also in the plains. In Burma it begins to breed in March. It makes a rough domed nest of grass and bamboo leaves, with a meagre lining of finer grass, which it places either in a bamboo clump or a bush close to, but not on the ground; occasionally 4 or even 5 feet above it. The eggs, generally three, sometimes two only or four, are china-white with numerous specks and small blotches of red and reddish brown distributed all over but, as a rule, more thickly at the larger end. The texture

is glossy and stout and the shape a broad oval. One hundred eggs average 16·6 × 12·6 mm.

Habits. The birds of this genus are typically plains' birds, seldom ascending the hills to any height. They keep to bushes, lower trees and bamboo when hunting for food, never resorting to the ground for this purpose and almost equally seldom visiting the higher trees. In their attitudes and manners they are more thoroughly *Timaliine* and less Tit-like than birds of the genera *Stachyris* and *Stachyridopsis*, for though they keep in good-sized flocks they creep and clamber about in a quiet, unobtrusive manner instead of fluttering or moving restlessly from one twig to another. They are very partial to bamboo-jungle, whether with or without undergrowth and are also found in scrub and grass and in deserted cultivation patches. Harington describes their note as a monotonous "chuk" constantly repeated.

(284) Mixornis rubricapilla minor.

GYLDENSTOLPE'S BABBLER.

Mixornis gularis minor Gyldenstolpe, Kungl. Sv. Vet.-Akad. Handl., lvi, 1916, p. 60 (Lat Bua Kao).

Vernacular names. None recorded.

Description. Differs from the last bird in having the crown less ferruginous, more brown; the stripes on the throat and breast finer and fewer; the upper parts a less pure olive-green.

Colours of soft parts and **Measurements** as in the last.

Distribution. Siam and Eastern Central Burma.

Nidification. Eggs obtained by Messrs. W. J. F. Williamson and E. G. Herbert near Bangkok in May and June measure about 16·9 × 13·0 mm. The nest seems to be almost invariably placed in Pine-apple plants.

Habits. This race seems to favour the haunts of mankind far more than the other races do. It is not only to be found round about villages and human habitation but actually enters gardens and orchards and breeds there.

(285) Mixornis rubricapilla pileata.

THE MALAY YELLOW-BREASTED BABBLER.

Prinia pileata Blyth, J. A. S. B., xi, 1842, p. 204 (Malay).
Mixornis gularis. Blanf. & Oates, i, p. 168.

Vernacular names. None recorded.

Description. Differs from the last two in having the stripes on the under parts much more developed; the crown more rufous and the upper parts also tinged with rufous and the exposed parts of the wing more castaneous.

Colours of soft parts and **Measurements.** The bill may be a trifle heavier and longer than in the last but the difference is quite insignificant. Davison records the iris as brown, otherwise both in size and colours of soft parts *pileata* agrees with the other races.

Distribution. The extreme South of Tenasserim and throughout the Malay Peninsula.

Nidification and **Habits** as in the other subspecies. Eggs sent me by Mr. W. A. T. Kellow measure about 17·1 × 12·7 mm.

The name *Motacilla gularis* Raffles, Trans. L.S., xiii, p. 312, 1820, which is the oldest name for this species, cannot be used as it is preoccupied by *Motacilla gularis* Gmelin (1788).

Genus **ALCIPPE** Blyth, 1844.

In this genus the bill is stout and slightly curved and is overhung by long hairs; the nostril is protected by a membrane; the wing is short and rounded, the first four primaries being graduated; the tail is about equal in length to the wing, the feathers being slightly graduated.

The genus contains but two species within our limits but these form numerous well-marked geographical races. The two species are very similar in colour but in habits differ considerably.

Key to Species and Subspecies.

A. Bill small; a conspicuous ring of white feathers round the eye.	
a. Chin and throat white, flanks tinged olivaceous	*A. nepalensis nepalensis*, p. 275.
b. Chin and throat ochraceous like abdomen	*A. n. fratercula*, p. 277.
B. Bill large; no ring of white feathers round eye.	
c. Head not striped or only obsoletely so.	
a′. Lower back and rump tinged rufous.	*A. poioicephala poioicephala*, p. 277.
b′. Lower back and rump grey like back.	
a″. Under parts tinged rufous	*A. p. phayrei*, p. 278.
″b. No rufous on under parts.	
a‴. Grey of head well defined from back	*A. p. davisoni*, p. 279.
b‴. Grey of head blending into colour of back	*A. p. brucei*, p. 278.
d. Head and neck conspiculously striped.	
c′. Stripes sooty-brown	*A. p. magnirostris*, p. 280.
d′. Stripes deep black	*A. p. haringtoniæ*, p. 280.

(286) Alcippe nepalensis nepalensis.

THE NEPAL BABBLER.

Siva nepalensis Hodgs., Ind. Rev., 1838, p. 89 (Nepal).
Alcippe nepalensis. Blanf. & Oates, i, p. 157.

Vernacular names. *Dao-péré-kashiba* (Cachari).

Description. A conspicuous ring of white feathers round the eye; head, neck and upper back ashy-brown with a vinaceous tinge; a dark sooty-brown stripe on either side of the crown ex-

tending down the neck to the back; ear-coverts grey; back olive-brown; exposed portions of the wings and tail yellowish brown; chin whitish; under parts pale fulvous, washed with olivaceous on the flanks and thighs.

Colours of soft parts. Iris light to deep hazel-brown; bill plumbeous or livid brown, black on the culmen and base of the upper mandible, lower paler; legs and feet pale fleshy or livid white.

Measurements. Total length about 125 mm.; wing 56 to 60 mm.; tail about 60 mm.; tarsus about 20 mm.; culmen 10·5 to 11·5 mm.

Distribution. The lower hills of Nepal, Sikkim, Assam both North and South of the Brahmaputra, Manipur, hills of Eastern Bengal, Chin Hills and Arrakan.

Nidification. This little bird breeds principally between 1,500 and 3,000 feet, making a small cup-shaped nest of grass and bamboo leaves lined with finer grasses. In some cases a little other material may be mixed with the rest, such as dead leaves, a little dry moss, or chips of bracken frond. It is placed either

Fig. 52.—Head of *A. n. nepalensis.*

in a bush some 12 inches to 4 feet from the ground or in a bamboo clump. The eggs number two to four and vary in the most extraordinary manner. The following are common types:—(1) Pure white with sparse but bold dots and specks of deep purple; (2) white with innumerable specks of lilac-red; (3) white to pale pink with blotches and small spots of light red; (4) pale to salmon-pink with clouds and smears all over of reddish; (5) pure white with a ring or cap of deep purple lines and hieroglyphics. The first three are the most common. Two hundred eggs average 18·4 × 14·0 mm.

The breeding season lasts from April to July, May being the month when most birds lay.

Habits. The Nepal Babbler may be found at all heights from a few hundred feet up to 4,000 feet but its favourite elevations are about half-way between the two. It gathers into small flocks in the winter, sometimes however keeping in pairs, and it hunts all kinds of cover, thick and thin, forest or bamboo, keeping to the bushes and lower trees and showing a most restless energetic disposition. At one moment it may be seen twisting backwards and forwards, over and under the branches, in its search for insects, at another fluttering into the air in pursuit of a gnat or fly, whilst, yet again, it may be seen racing along some bough after a quickly travelling beetle or other prey. It is by no means shy and keeps uttering continually a little chattering call of several

notes, which would soon betray its whereabouts if its actions had not previously done so.

(287) Alcippe nepalensis fratercula.

THE SHAN STATES BABBLER.

Alcippe fratercula Rippon, Bull. B.O.C., xi, p. 11 (1900) (Shan States).

Vernacular names. *Chin-ting-wo-lee* (Kachin).

Description. The ring of white feathers round the eye less conspicuous than in the Nepal Babbler; there is no vinaceous tinge on the upper plumage and the under parts are rich ochraceous, the chin being of the same colour as the rest.

Colours of soft parts. "Iris crimson, the legs and bill horn-colour" (*Rippon*).

Measurements. Wing 58 to 66 mm., the southern birds measuring a trifle less than the northern; culmen 11 mm.

Distribution. The Bhamo Hills, Shan States and hills of Eastern Burma to Tenasserim.

Nidification similar to that of the last. Thirty eggs average 18·9 × 13·8 mm. and go through as great a variation in colour as do those of that bird.

Habits. Rippon and Harington both describe the habits of the Shan States birds as being as vivacious and free from shyness as those of the preceding bird.

(288) Alcippe poioicephala poioicephala.

THE NILGIRI QUAKER-BABBLER.

Thimalia poioicephala Jerd., Madr. Jour. L.S., xiii, p. 169 (1844) (Nilgiris).
Alcippe phæocephala. Blanf. & Oates, i, p. 158.

Vernacular names. None recorded.

Description. Head and neck brownish ashy-grey; ear-coverts hair-brown; back and upper parts brown, tinged grey on upper back, olive on lower back and rufous on rump and upper tail-coverts; outer webs of primaries and visible portions of tail chestnut; chin and throat greyish buff; breast, abdomen, flanks and under tail-coverts ochraceous buff.

Colours of soft parts. Iris slaty-grey; bill horny-brown; legs and feet greyish-fleshy.

Measurements. Total length about 150 mm.; wing 66 to 70 mm.; tail about 65 mm.; tarsus about 17 to 18 mm.; culmen 13 mm.

Distribution. Hills of Southern India, Nilgiris, Coonoor, Wynaad etc. and Travancore.

Nidification. The Nilgiri Quaker-Babbler is said to breed from January to June, generally in May and June, in the hilly country from the lowest foot-hills upwards. The nest is a cup of leaves, grass and a little moss or lichen and lined with black roots. It is usually placed in a bush, 2 to 8 feet from the ground, standing in either dense forest or in scrub-jungle. The eggs are nearly always two only in number and vary in colour very greatly but the majority are of the clouded pink type described as one of the types of the Nepal Babbler. Thirty-eight eggs average 20·0 × 15·1 mm.

Habits. This Babbler is found from the level of the plains in broken country up to some 6,000 feet. In habits it appears to agree well with *A. p. phayrei* described further on.

(289) Alcippe poioicephala brucei.

THE BOMBAY QUAKER-BABBLER.

Alcippe brucei Hume, J. A. S. B., xxxix, p. 122 (1870) (Mahabaleshwar).

Vernacular names. *Chit Karuvi* (Tel.).

Description. A larger and much greyer bird than the last; the head and neck paler than in that bird and grading into, not contrasting with, the colour of the back; there is no rufous tinge on the rump and upper tail-coverts and the quills and tail-feathers are light brown rather than chestnut.

Colours of soft parts as in the last.

Measurements. Wing 72 to 75 mm.; bill 14 to 15 mm.

Distribution. "Mahbaleshwar, Western Ghats from Rajkot in Khathiawar to Belgaum; the Central Provinces; Pachmarhi and the Paresnath Hill, Lower Bengal" (*Harington*).

Nidification as in the last. Nearly all the eggs I have seen of this race have the ground-colour pale salmon, whilst the markings consist of smears and blotches of light red and reddish brown, often covering the greater part of the surface of the whole egg. Ten eggs measure about 19·1 × 14·6 mm.

Habits do not differ from those of the Nilgiri and the Arrakan Quaker-Babblers.

(290) Alcippe poioicephala phayrei.

THE ARRAKAN QUAKER-BABBLER.

Alcippe phayrei Blyth, J. A. S. B., xiv, p. 601 (1845) (Arrakan; Blanf. & Oates, i, p. 158.

Vernacular names. *Dao-pere-gadeba* (Cachari).

Description. The head and neck in this form are brownish grey gradually changing into the olive-brown of the back; the chin and throat are greyish and the rest of the under parts are rufescent

ochraceous. The exposed portions of primaries and tail are yellowish brown.

Colours of soft parts. Iris pearly-white to grey; eyelids slaty; upper mandible brownish-horny, darker at base and on culmen, lower paler and yellowish; legs and feet pale dull fleshy, or fleshy-white.

Measurements. Wing 66 to 72 mm.; culmen 12 to 13 mm.

Distribution. Assam and Western Burma from the Chin Hills to the South of Arrakan.

Birds from Assam and others from W. Burma differ in some respects, more especially in the tint of the grey on the head and again in the amount of rufous on the lower plumage. However, though material from Assam is plentiful, from Burma it is very scanty and more must be obtained before the value of the differences can be estimated.

Nidification. The nest of this bird is merely a rather larger edition of that of the Nepal Babbler and is placed in quite similar positions. It breeds in great numbers in all the hills South of the Brahmaputra, not only at elevations up to 2,000 feet but also freely in the plains themselves. I have myself taken eggs as early as March and as late as September but May and early June is the principal breeding time. The eggs only differ from those of the Nepal Babbler in being larger, but the great majority are in colour of the clouded and smudged type described as No. 4 in that bird. One hundred and fifty eggs average 19·6 × 15·0 mm.

Habits. The larger Quaker-Babblers of this group (*poioicephala*) are rather more *Timaliine* in their habits than those of the previous (*nepalensis*) group. More shy and retiring, they are also less quick and active in their movements. They use their legs more, yet are not so Tit-like in their actions and though they take readily to flight, they do not make the constant little sallies into the air, both in play and for food, like the Nepal Babblers do. I do not think they ever actually descend on to the ground to feed except for a second or two.

(291) Alcippe poioicephala davisoni.

THE TENASSERIM QUAKER-BABBLER.

Alcippe phæocephala davisoni Harington, B. N. H. S. J., xxiii, p. 453 (1915) (Tavoy).

Vernacular names. None recorded.

Description. Very similar to *A. p. brucei* from S. India but much darker. The head and neck are brownish-ashy well defined from the back; in some specimens there are faint indications of the coronal stripes but in most these are quite absent.

Colours of soft parts. Iris slaty-grey to slaty-yellow; bill, upper mandible horny-brown, lower yellowish.

Measurements. Wing 68 to 73 mm.; culmen 13 to 14 mm.

Distribution. Tavoy, Mergui South to about the latitude of Moulmein.

Nidification. Apparently similar to that of others of this group but the eggs obtained so far are all of the pink blotchy type except two clutches sent me from Tenasserim by one of my collectors, which are white with deep purple specks and spots. They were taken on the 19th January and the 1st June respectively and measure 19·5 × 14·8 mm.

Habits. Davison says that this Quaker-Babbler "is found only in the low hills and at their bases where the country is well wooded. It avoids the dry, deciduous forests. In habits, voice etc. it exactly resembles the preceding species" (the Nepal Babbler).

(292) Alcippe poioicephala haringtoniæ.

The Upper Burma Quaker-Babbler.

Alcippe phæocephala haringtoniæ Hartert, Bull. B. O. C., xxv, p. 10 (1909) (Bhamo).

Vernacular names. None recorded.

Description. Differs from all but the next bird in having coronal bands of black on either side of the head extending down to the upper back. The under parts from the chin to vent are ochraceous buff tinged with olivaceous on the flanks.

Measurements. Wing 65 to 70 mm.; culmen 12 to 13 mm.

Distribution. N.E. Upper Burma and N. Shan States.

Nidification. Not recorded but sixteen eggs taken by Harington, Mackenzie and Grant average about 18·7 × 14·8 mm.

Habits. Harington only found this form in the plains near Bhamo itself and not in the hills.

(293) Alcippe poioicephala magnirostris.

The Lower Burma Quaker-Babbler.

Alcippe magnirostris Walden, Blyth's B. of B., p. 115 (1875) (Karennee).

Vernacular names. None recorded.

Description. Differs from the last race in having the coronal stripes sooty-brown instead of black; the chin and throat are whitish and the head is more brownish grey and well defined from the back; the ear-coverts also are greyish brown and the olive-brown of the back is tinged with grey.

Measurements. Wing 69 to 73 mm.; culmen 13 mm.

Distribution. Siam, S. Shan States, Karenni and S.E. Burma to just north of Moulmein.

Nidification and **Habits.** Nothing recorded, but fifteen eggs taken by Mr. J. M. D. Mackenzie average 19·2 × 14·7 mm.

In coloration, shape and markings they are like those of the last bird.

Genus **RHOPOCICHLA** Oates, 1889.

This genus differs from *Alcippe* in having the nostrils rounder, exposed and pierced in the anterior part of the membrane, and in having a shorter tail when compared with the wing. The bill is curved throughout; there are no hairs overhanging the nostrils but the rictal bristles are well developed. There is only one species in the genus confined to S. India and Ceylon, where it is represented by three races.

Rhopocichla atriceps.

Key to Subspecies.

A. Crown and sides of the head black ..	*R. a. atriceps*, p. 281.
B. Forehead and ear-coverts only black..	*R. a. nigrifrons*, p. 282.
C. Ear-coverts only blackish	*R. a. bourdilloni*, p. 282.

(294) Rhopocichla atriceps atriceps.

THE BLACK-HEADED BABBLER.

Brachypteryx atriceps Jerdon, Madr. Jour. L. S., x, p. 250 (1839) (Trichoor).
Rhopocichla atriceps. Blanf. & Oates, i, p. 160.

Vernacular names. None recorded.

Description. Forehead, crown, nape, ear-coverts and under the eye black; the whole upper plumage, wings and tail fulvous brown; lower plumage dull white, changing to olivaceous on the flanks and under tail-coverts.

Colours of soft parts. Iris bright yellow, pale orange or buff; bill dull black, commissure and lower mandible fleshy-pink; legs and feet pale plumbeous shaded in varying degree with fleshy-pink or dull purple.

Measurements. Total length about 140 mm.; wing 54 to 60 mm.; tail about 50 mm.; tarsus about 23 mm.; culmen about 13 to 14 mm.

Distribution. The Nilgiris and hills of S.W. India, not Travancore.

Nidification. The Black-headed Babbler appears to breed in almost every month of the year from December to August and probably in the other three also. It makes an oval nest of grass lined with softer bits of the same which it places in bamboos, grass and reeds by roadsides through jungle, in reed-beds or scrub-jungle. It is found during the breeding season from the lower hills up to 6,000 feet.

The eggs, two in number, are pure white with numerous small spots and dots of dark purple-red scattered over the whole surface but generally more numerous at the larger end. The texture is hard and glossy. Twenty eggs average about $19{\cdot}2 \times 13{\cdot}9$ mm.

Habits. The birds of this genus are said to have much the same habits as those of *Pellorneum*, i. e. they are shy, rather skulking

birds, shunning observation and haunting thick cover. Jerdon says: "It frequents the thickest underwood in dense and lofty jungles; lives in small flocks of five or six, and is constantly hopping about the thick bushes with an incessant loud, twittering note. It lives on various insects."

(295) Rhopocichla atriceps bourdilloni.

BOURDILLON'S BABBLER.

Alcippe bourdilloni Hume, S. F., iv, p. 399 (1876) (Mynall).
Rhopocichla bourdilloni. Blanf. & Oates, i, p. 161.

Vernacular names. None recorded.

Description. The black of the crown, nape, lores and cheeks of *R. a. atriceps* is replaced with brown and the lower parts from lower breast to under tail-coverts are ferruginous.

Distribution. Travancore, from North to South.

Colours of soft parts and **Habits** as in the last bird. Mr. T. F. Bourdillon describes the nest as being made of soft blades of reed-grass lined with fine roots. The eggs, which are always two, measure 19·1 × 14·3 mm.

The principal breeding season lasts from March to May but there seems to be a second brood very often in July and August.

(296) Rhopocichla atriceps nigrifrons.

THE BLACK-FRONTED BABBLER.

Alcippe nigrifons Blyth, J. A. S. B., xviii, p. 815 (1849) (Ceylon).
Rhopocichla nigrifrons. Blanf. & Oates, i, p. 160.

Vernacular names. *Batitchia* (Ceylon).

Description. Differs from *R. a. atriceps* in having the black of the crown replaced by rufous-brown, a little darker than the rest of the upper plumage; the white feathers of the cheeks have lengthened black shafts and the vent, thighs and under tail-coverts are rufous-brown.

Colours of soft parts and **Measurements** as in the two preceding forms.

Distribution. Ceylon only.

Nidification. There are apparently two breeding seasons, one in May and June and the second in December and January. The nest is a ball of dead leaves with an inner lining of twigs and is usually placed in some bramble or straggling bush near a jungle pathway, 2 to 5 feet from the ground. The eggs, two only, are exactly like those of the other races and measure about 19·2 × 14·2 mm.

Habits. According to Legge this race is much bolder and more ively than either of the others and he describes it as a very nquisitive, cheerful little bird fluttering about the bushes and ollowing one another in true Babbler style.

Genus SCHŒNIPARUS Hume, 1874.

With the genus *Schœniparus* we enter on a group of small birds essentially *Timaliine* both in characteristics and in habits. They possess the typical short, rounded wing and strong tarsi and feet but differ from all the rest in having short, blunt bills very Tit-like in their superficial appearance. In nidification and habits they resemble many other genera, building ball-shaped nests placed on the ground, whilst they seek their food at least as much on the ground as on the lower bushes.

The nostrils are covered by a membrane and not overhung by hairs and the rictal bristles are small; the wings and tail are about equal in length and the latter is well graduated.

Key to Species and Subspecies.

A. No chestnut band across breast.	
a. Sides of neck not striped or only obsoletely so.	
a'. Above olive-brown tinged ochraceous	*S. dubius dubius*, p.
b'. Above olive-brown with no ochraceous tinge......................	*S. d. genestieri*, p. 285.
b. Sides of neck boldly striped	*S. d. mandellii*, p. 284.
B. A chestnut band across breast	*S. rufigularis*, p. 286.

(297) Schœniparus dubius dubius.

THE TENASSERIM TIT-BABBLER.

Proparus dubius Hume, P. A. S. B., 1874, p. 109 (Muleyit).
Schœniparus dubius. Blanf. & Oates, i, p. 168.

Vernacular names. *Prep-dor* (Kachin).

Description. Forehead, crown and nape reddish brown, each feather obsoletely margined darker and the forehead tinged with chestnut; lores and a band on each side of the crown, blending on the back, black; a white supercilium from the eye to the nape; ear-coverts and sides of neck pale fulvous-brown; upper plumage olive-brown, tinged with rufous on exposed parts of wings and tail; lower plumage pale fulvous, whitish on the chin and throat and olivaceous on the flanks and under tail-coverts.

Colours of soft parts. Iris yellowish red, pale yellow to slaty-pink; bill dark brown to dull black; legs and feet fleshy.

Measurements. Total length about 135 mm.; wing 53 to 58 mm.; tail about 60 mm.; tarsus 25 mm.; culmen 12 mm.

Distribution. Northern and Central Tenasserim.

Nidification. The Tenasserim Tit-Babbler makes a domed nest of bamboo leaves and grass, which it places either on the ground or close to it. The lining, always very slight, is of roots and fibres and occasionally these are made use of in the body of the nest. The sites selected seem to be generally in forests with amp

undergrowth and, less often, bamboo-jungle. The eggs number from two to four. In colour they are white or creamy-white, smudged and blotched with yellowish brown and with a few darker, almost black, spots and lines. The breeding season is from February to May. Thirty eggs average 20·5 × 15·9 mm.

Habits. The birds of this genus are more typically *Timaliine* in their habits than *Alcippe*, less so than *Rhopocichla*. They collect in small flocks of five to ten birds, haunt brushwood and low forest and feed wholly on insects which they obtain principally on the ground. Davison says that their note is like "chir-chit-chit-chit," constantly repeated.

(298) Schœniparus dubius mandellii.

The Assam Tit-Babbler.

Schœniparus mandellii Godw.-Aust., A. M. N. H., (4) xviii, p. 33 (1876) (Naga Hills) ; Blanf. & Oates, i, p. 169.

Vernacular names. *Dao-chitter* (Cachari).

Description. Differs from the last in having the upper plumage more olive and the chin and throat buff like the centre of the

Fig. 53.– Head of *S. d. mandellii.*

breast; the black supercilium and black markings of the head and upper back more pronounced; and the sides of the neck are distinctly striped with black and buff.

Colours of soft parts as in *S. d. dubius.*

Measurements. Wing 56 to 64 mm.; tail about 62 mm.; tarsus 25 mm.; culmen 12 mm.

Distribution. Assam, Chin Hills and W. Burma.

Nidification. This handsome little Babbler breeds in great numbers during April, May and June at all elevations above 3,000 and fully up to 6,000 feet. It may be found in almost any kind of cover but prefers forest with an undergrowth of bushes, bracken and raspberry vines. The nest is practically invariably placed on the ground, generally under the protection of some thick patch of cover and always on a more or less sloping bank. The materials used are dead leaves mixed with bracken, grass, roots etc. and the shape is either a deep, semi-domed cup or a

completely domed, egg-shaped affair measuring about 7 to 8 inches high by about 5 to 6 inches broad. The full complement of eggs is three or four but sometimes two only are laid. The eggs are like those of the last bird and two hundred average 20·8 × 15·6 mm.; the maxima are **22·0** × 16·0 and 19·5 × **16·1** mm., and minima **19·4** × 15·3 and 20·7 × **15·0** mm.

Habits. During the winter the Assam Tit-Babbler collects in small flocks of half-a-dozen to a dozen individuals, haunting forest with ample undergrowth and to a less extent bamboo-jungle and scrub. It is most common from 3,000 feet upwards and is found up to at least 6,000 feet and possibly a good deal higher. It is a restless, energetic little bird feeding partly on the ground, partly on the low bushes and trees, constantly changing its position and now and then fluttering from one perch to another as well as scrambling and hopping through the cover. Whilst engaged in feeding they utter a constant "chir-r-r-r" alternating with a sharp "chit." In the breeding season their habits alter greatly and they become shy, retiring little birds, and instead of being able to watch them minutes at a time all one sees of them is a small brown object slipping out of sight into cover when disturbed.

(299) Schœniparus dubius genestieri.

Rippon's Tit-Babbler.

Alcippe genestieri Oustalet, Bull. Mus. d'Hist. Nat., Paris, iii, p. 210 (1897) (Tsékao).

Vernacular names. *Prep-dor* (Kachin).

Description. Differs from *S. d. dubius* in having the forehead pale rufous; the crown is golden-brown with very faint dark edges to the feathers; the upper plumage is olive-brown and the sides of the neck are not streaked.

Colours of soft parts as in *S. d. dubius.*

Measurements. Wing 58 to 61 mm.; tail about 60 mm.; tarsus 24 mm.; culmen 11 mm.

Distribution. Kachin and Bhamo Hills, Yunnan, Shan States and S.W. China.

Rothschild has shown (Nov. Zool. xxviii, p. 36) that *intermedius* is not separable from *genestieri* and with this I agree, but the former sometimes has quite plain indications of the neck-stripes as in *mandellii* and as we should expect in that part of its range nearest that race.

Nidification. Resembles that of the last bird. Harington, Grant and others took many nests in March, April and May between 4,000 and 6,000 feet. The eggs are indistinguishable from those of the last two birds and measure about 19·9 × 15·5 mm.

Habits differ in no way from those of the Assam Tit-Babbler.

(300) Schœniparus rufigularis.

THE RED-THROATED TIT-BABBLER.

Minla rufigularis Mandelli, S. F., i, p. 416 (1873) (Bhutan Duars).
Schœniparus rufigularis. Blanf. & Oates, i, p. 170.

Vernacular names. None recorded.

Description. Forehead, crown and nape chestnut, bounded on each side by a black band, the two meeting on the nape; lores and supercilia white; upper part of ear-coverts and a patch below the eye blackish; lower part of ear-coverts rufous, connected together by a broad chestnut band across the throat; upper plumage, wings and tail olive-green, the outer webs of the feathers of wings and tail suffused with fulvous; chin, throat and centre of breast and abdomen white; remainder of the lower plumage olivaceous, tinged with rufous on the under tail-coverts.

Colours of soft parts. Iris reddish brown to lake-brown; bill black; legs and feet yellowish brown, fleshy-brown or fleshy-livid.

Measurements. Total length about 140 mm.; wing 51 to 55 mm.; tail about 50 mm.; tarsus about 21 to 22 mm.; culmen about 10 to 11 mm.

Distribution. Bhutan Duars; Assam North and South of the Brahmaputra, Manipur and Eastern Bengal Hill tracts.

Nidification. This little Tit-Babbler breeds in great numbers all round the foot-hills of Margherita in E. Assam and probably up to some 3,500 feet. Dr. H. N. Coltart and I took many nests and had many brought to us, with the birds, from the central ranges. The nest is like that of the *dubius* group but perhaps more moss, roots, fern and bracken are used in its construction. It is always placed on the ground and quite as often in small scrub- and bamboo-jungle as in forest whilst occasionally we found it in small ravines running through tea cultivation. The eggs are similar to those of other birds of the genus but are decidedly greyer and less bold in coloration as a whole. One hundred eggs average 19·5 × 14·7 mm., the extremes being **21·1 × 15·7** mm. and **17·3 × 13·9** mm.

Habits. Those of the genus, but I think this bird feeds less on the ground than the other species and flies more freely and often without being frightened into doing so.

Genus PSEUDOMINLA Oates, 1894.

The generic name *Sittiparus* being preoccupied Oates renamed his genus as above. This genus contains two species within Indian limits which differ from *Schœniparus* in having the tail much shorter than the wing, whilst from *Lioparus* it differs in having no hairs overhanging the nostrils.

Key to Species and Subspecies.

A. Head grey; a long black supercilium. *P. cinerea*, p. 287.
B. Head chestnut; no black supercilium.
  a. Crown dark chestnut............ *P. castaneiceps castaneiceps*, [p. 288.
  b. Crown light chestnut............ *P. c. brunneicaudata*, p. 289.

(301) Pseudominla cinerea.

THE DUSKY-GREEN TIT-BABBLER.

Minla cinerea Blyth, J. A. S. B., xvi, p. 449 (1849) (Darjeeling).
Sittiparus cinereus. Blanf. & Oates, i, p. 171.

Vernacular names. *Dao-péré kashiba* (Cachari).

Description. Upper plumage greyish green, the feathers of the forehead, crown and nape margined with black; a broad black band on either side of the crown from the forehead to the nape, terminating in a number of streaks on the upper back; a broad

Fig. 54.—Head of *P. cinerea*.

pale yellow supercilium from the back to the nape; a line through the eye black; ear-coverts mixed grey and black; cheeks yellow, tipped with black; wing and tail-feathers suffused on the outer webs with the colour of the back; whole lower plumage yellow, the sides of neck, breast and abdomen olivaceous.

Colours of soft parts. Iris brown or reddish brown; bill dark horny-brown to nearly black; legs fleshy- or reddish-brown; "fleshy yellow" (*Jerdon*).

Measurements. Total length about 110 to 115 mm.; wing 53 to 58 mm.; tail about 42 to 44 mm.; tarsus about 23 mm.; culmen 10 mm.

Distribution. Nepal, Sikkim and Assam North and South of the Brahmaputra.

Nidification. The Dusky-green Tit-Babbler breeds from 2,500 up to at least 6,000 feet but not often below some 3,500 feet. The nesting season commences early in April and continues up to the latter part of July. The nest is either a deep cup, semi-domed cup or a complete oval and is placed either low down in bushes, bamboo clumps, vines and creepers or, more rarely, very low down in amongst the roots of the same. The principal materials in all cases where bamboos are handy are bamboo leaves; elsewhere soft

blades of grass but with these are mixed a certain amount of dead leaves, fern- and bracken-fronds and weeds; tendrils and roots are used to bind the materials together. The lining is of roots or bamboo leaves and sometimes a little moss is used inside and outside the nest. The sites selected may be either in bamboo and scrub or in deep forest. The eggs number two, three or four and have the ground-colour anything from pure white to pale sienna and the markings consist of tiny specks of dark sienna-brown, often forming a ring or cap but profusely scattered elsewhere also. A few eggs with white ground have the specks still darker and finer. The shape is generally a short oval; pyriform eggs not being rare. They are very fragile and have no gloss. Sixty eggs average 18·3 × 14·3 mm.

Habits. This is a still more cheerful, lively little bird than those of the genus *Schœniparus* and when fluttering about a bush on which insects are plentiful remind one of Warblers of the genus *Phylloscopus.* They do not, I think, ever feed on the ground nor on the other hand do they ascend any height into trees but I have seen them in grass and scrub occasionally and in bamboos often; when in deep forest, which they most affect, they prefer places where there are glades or breaks such as are made by streams, jungle-tracks etc. rather than the denser, darker portions. They keep up a soft twittering the whole time they are feeding.

(302) Pseudominla castaneiceps castaneiceps.

THE CHESTNUT-HEADED BABBLER.

Minla castaneiceps Hodgs., Ind. Rev., 1838, p. 38 (Nepal).
Sittiparus castaneiceps. Blanf. & Oates, i, p. 172.

Vernacular names. None recorded.

Description. Forehead, crown and nape chestnut-brown, the feathers of the forehead with broad white streaks, those of the crown and nape with pale rufous streaks; a broad line through the eye and a narrow moustachial streak black; remainder of sides of head white; back, scapulars, rump and smaller wing-coverts olive-green tinged with fulvous; greater wing-coverts and primary-coverts black; winglet black on the outer webs, white on the inner; quills olive-green, the earlier primaries edged with hoary-grey, the latter and the secondaries edged with chestnut at the base; innermost secondaries broadly edged with olive-green on both webs; below from chin to under tail-coverts pale fulvous-white, the sides of breast and body ochraceous; under wing-coverts white.

Colours of soft parts. Iris red-brown to crimson; bill, above dark horny, the lower mandible dull fleshy, sometimes yellowish, especially at base; legs and feet dingy greenish yellow or yellowish-horn.

Measurements. Total length about 115 to 120 mm.; wing 53 (*Harington*) to 67 mm.; tail about 45 mm.; tarsus about 22 to 23 mm.; culmen 9 mm.

Distribution. Sikkim, Nepal, Assam North of the Brahmaputra, Lakhimpur, Chin and Kachin Hills, Shan States and hills of Central East Burma to Tenasserim.

Specimens from N. Assam are perhaps a little more rufous or fulvous than those from the Shan States South to Tenasserim, but the average difference is so little that it seems hardly enough for the purposes of subspecific rank. Individual specimens vary greatly.

Nidification. The nests, though similar in shape and site to those of the last, differ in construction in having a great deal of moss mixed with the other material. Davison describes nests as made wholly of this material and worked beautifully into the living moss growing on trees. The eggs are very like those of the last bird and twenty measure on an average 18·1 × 13·6 mm.

Habits. Those of the genus, but Stevens says that this bird is more arboreal in its habits than the last. It is found from almost the level of the plains up to 7,000 feet.

(303) Pseudominla castaneiceps brunneicauda.

THE SHILLONG CHESTNUT-HEADED BABBLER.

Minla brunneicauda Sharpe, Cat. B. M., vii, p. 609 (1883) (Shillong).

Vernacular names. None recorded.

Description. Differs from the last in having the head much paler and more rufous, the chestnut on the wings paler; the tail brownish.

Colours of soft parts as in the last.

Measurements. Wing 58 to 62 mm.; tail about 45 mm.; tarsus 22 mm.; culmen 9 to 10 mm.

Distribution. Khasia Hills, Cachar Hills and probably Manipur.

Nidification. Nests in the Khasia Hills in April, May and June. The nest is like that of the last but with less moss and more grass and bamboo leaves both in the lining and the outer part. Forty eggs average 17·9 × 13·4 mm.

Habits similar to those of the last two.

Genus FULVETTA David & Oust., 1877.

The name *Proparus* having been first applied to a species of *Minla* is only a synonym of that genus and cannot be used for this. David and Oustalet's name, originally given to a Chinese species, is therefore available. In *Fulvetta* the nostrils are covered by a membrane and are overhung by numerous hairs but the rictal bristles are short. The hind claw is very long and thick, equal in length to the hind toe. The wing and tail are

about equal in length and the latter is graduated. The plumage is soft and dense.

Three species are found within Indian limits and these again divide into numerous races extending to China and Formosa.

Key to Species and Subspecies.

A. A white supercilium commencing at the eye.
  a. Crown reddish-brown, bordered on the sides of the occiput with black .... *F. vinipecta vinipecta,* [p. 290.
  b. Crown dull chestnut, bordered on the sides of the occiput with reddish brown .... *F. v. austeni,* p. 291.
B. White supercilium commencing at the base of the bill .... *F. v. ripponi,* p. 291.
C. No white supercilium.
  c. Crown chestnut .... *F. ruficapilla sordidior,* [p. 292.
  d. Crown brown .... *F. manipurensis,* p. 292.

(304) Fulvetta vinipecta vinipecta.

HODGSON'S FULVETTA.

Siva vinipectus Hodgs., Ind. Rev., 1838, p. 89 (Nepal).
Proparus vinipectus. Blanf. & Oates, i, p. 173.

Vernacular names. None recorded.

Description. Lores dusky; forehead, crown, ear-coverts, cheeks and nape reddish-brown; a broad white supercilium from the eye to the nape, bordered above by a black line, the two on either side of the head converging on the back; back brown with a vinous tinge; rump, wing and upper tail-coverts ferruginous; tail brown, washed with rusty-red on the outer webs; primary-coverts chestnut; the earlier primaries edged with bluish grey, the others edged with black; secondaries ferruginous on the outer webs; chin, throat aud upper breast whitish with dusky streaks; sides of the breast like the back but paler; abdomen and under tail-coverts dark fulvous.

Colours of soft parts. Iris pale ochre (*Godw.-Aust.*), dark brown (*Hume*) or reddish-brown; bill dark fleshy- or horny-brown above, paler livid-fleshy below; legs and feet fleshy-brown or dull purplish-fleshy.

Measurements. Total length about 120 mm.; wing 57 to 60 mm.; tail about 55 mm.; tarsus about 24 mm.; culmen 10 mm.

Distribution. Simla, Nepal, Sikkim and Assam North of the Brahmaputra.

As Harington has pointed out, birds west of Nepal have the head somewhat brighter and have fewer markings on the throat, but more material is required to show whether the differences are individual or subspecific.

Nidification. This Fulvetta breeds in the Himalayas in May and June between 6,000 and 10,000 feet, making a deep, compact cup of grass and bamboo leaves completely covered with moss outside, except at the base, and densely lined with fine grass and roots and an inner lining of hair or fur. It appears to be generally placed low down in bushes in thick scrub. The eggs number two or three and are like no other eggs known to me, the ground-colour is a French grey, or grey-blue with markings at the larger end of sepia and dark brown with a few underlying blotches of pale neutral tint; all the markings are bold in character but sparse and confined almost entirely to the larger end. They measure about 18·2 × 13·7 mm.

Habits. The habits of the Fulvettas seem to be much the same as those of *Pseudominla*, though very little has been recorded. They are found up to at least 12,000 feet.

(305) Fulvetta vinipecta austeni.

GODWIN-AUSTEN'S FULVETTA.

Proparus austeni O.-Grant, Bull. B. O. C., v, p. 3 (1895) (Manipur).

Vernacular names. *Dao-peré-gajao* (Cachari).

Description. Differs from the last in having the head duller chestnut and the black head-stripes replaced by deep reddish-brown; chin white and throat white with reddish-brown spots.

Colours of soft parts. Iris reddish-brown; bill dark brownish-black; legs and feet dull fleshy-brown.

Measurements about the same as in Hodgson's Fulvetta. Wing 57 to 60 mm.; culmen 9 to 9·5 mm.

Distribution. Naga Hills, Manipur, Cachar Hills and probably all the hill-ranges South of the Brahmaputra over 5,000 feet.

Nidification and Habits. Nothing recorded. In Cachar it was a winter visitor only to the highest peaks on the Barail Range, where I found it in small flocks in the stunted oak forest at 5,000 to 6,000 feet. It is an active, cheerful little bird, restlessly moving about the bushes and lower trees, both by feet and wings, uttering continually a soft "chip, chip."

(306) Fulvetta vinipecta ripponi.

THE CHIN HILLS FULVETTA.

Proparus ripponi Harington, Bull. B. O. C., xxxiii, p. 59 (1913) (Mt. Victoria).

Vernacular names. None recorded.

Description. Similar to *F. v. austeni* but differs in having the white supercilium commencing from the base of the bill; the ear-coverts are chocolate-brown, almost the same colour as the head instead of very dark brown contrasting with it.

Colours of soft parts as in *austeni*.

Measurements. Total length about 110 mm.; wing 51 to 55 mm.; tail about 54 mm.; tarsus about 22 mm.; culmen 9 mm.

Distribution. Mt. Victoria and highest peaks of Chin Hills.

Nidification. Nests taken by Mr. F. Grant on Mt. Victoria were similar to those of *F. v. vinipecta*, being made of grass and leaves thickly bound together with green moss, the leaves only showing through in small patches here and there; the lining was of fine roots and in shape the nests were rather deep, well-made cups. They were placed in low bushes in forest. Two eggs sent me by Mr. Grant are like those of Hodgson's Fulvetta but measure only 16·3 × 13·0 mm.

Habits. Those of the genus. It is found on Mt. Victoria up to 9,000 feet.

(307) Fulvetta manipurensis.

The Manipur Fulvetta.

Proparus manipurensis O.-Grant, Bull. B. O. C., xvi, p. 123 (Manipur).

Vernacular names. None recorded.

Description. Similar to *F. v. vinipecta* but differs in wanting the white supercilia and in having the flanks and sides bright tawny-rufous; the coronal stripes are chocolate, not black, and the lower back, rump and upper tail-coverts are dull ochraceous orange.

Colours of soft parts. The legs in the dried skin are light brownish-yellow.

Measurements. Wing 50 to 56 mm.; tail about 47 mm.; tarsus about 22 mm.; culmen 8 mm.

Distribution. Obtained by Godwin-Austen on the Owen-khulno Peak, Manipur, and not again by anyone else.

Nidification and Habits. Unknown; found at 8,000 feet.

(308) Fulvetta ruficapilla sordidior.

Rippon's Fulvetta.

Proparus sordidior Rippon, Bull. B. O. C., xiii, p. 60 (1903) (Talifu).

Vernacular names. None recorded.

Description. Lores and in front of the eye greyish; a white ring round the eye; forehead, crown and nape dull chestnut; a faint grey supercilium and over that a black stripe; ear-coverts greyish brown; back and wings olive-grey; outer edge of first primaries bluish grey, inner black; lower back, rump and upper tail-coverts and tail fulvous; chin and throat grey, obsoletely striped; breast vinous grey; flanks and abdomen pale fulvous.

Colours of soft parts. "Iris dark brown; bill black-brown, lower mandible yellow-brown; legs and feet dark olive-brown" (*Rothschild*. Nov. Zool., xxviii, p. 27).

Measurements. Wing 53 to 57 mm.; tail about 54 mm.; tarsus about 22 mm.; culmen about 9 mm.

Distribution. Yunnan and W. China and ? Shan States.

Eggs of a Fulvetta sent me from the Eastern Shan States probably belonged to this race.

Nidification and **Habits.** Frequents mountains between 7,000 and 11,000 feet elevation.

Genus **LIOPARUS** Oates, 1889.

As pointed out by Oates this genus differs from *Fulvetta* in having the hairs over the nostrils longer and the rictal bristles much longer; a shorter, broader bill and, especially, by its much shorter hind claw. The genus contains but one very little-known species which Hodgson first called *chrysotis* and then later altered to *chrysæus.* The former name, however, must stand.

(309) Lioparus chrysotis.

THE GOLDEN-BREASTED FULVETTA.

Proparus chrysotis (Hodgs.), Blyth, J. A. S. B., xiii, p. 938 (1884) (Sikkim).
Lioparus chrysæus. Blanf. & Oates, i, p. 174.

Vernacular names. *Prong-samyer-pho* (Lepcha).

Description. Forehead, crown, nape and lores soft blackish-ashy; ear-coverts, cheeks and a ring round the eye silvery-white, the first streaked with ashy; back and scapulars ashy-olive; rump and upper tail-coverts olive-green; tail brown, the basal two-thirds of all the feathers margined with orange-yellow; wing-coverts black; wings dark brown, the first five primaries edged with orange-yellow; the outer secondaries all broadly margined with the same and tipped with white; the inner secondaries broadly margined with white on the inner webs; chin and throat silvery-ashy-brown; remainder of lower plumage bright orange-yellow.

Colours of soft parts. Iris brown; bill plumbeous, paler below; legs pale fleshy.

Measurements. Total length about 110 mm.; wing 50 to 54 mm.; tail about 50 mm.; tarsus about 23 mm.; culmen about 8 mm.

Distribution. Nepal, Sikkim and Assam in the higher ranges both North and South of the Brahmaputra, Manipur.

Nidification. Hodgson describes the nests as oval, measuring about 6" × 4·5", made almost entirely of bamboo leaves and grass and lined with grass and moss roots. Nests taken by H. Stevens in Nepal agree well with the above but are smaller and are very deep cups, not domed, densely lined with feathers. They were placed in clumps of bamboo as were Hodgson's. The eggs, three in number, are white, deeply tinged with pink before being blown, with blotches and spots of sienna-brown and pale

neutral tint, principally disposed as a ring round the larger end. They measure about 17·4 × 13·3 mm. Mr. Stevens's nests were taken on the 29th May and 3rd June at about 9,000 feet.

Habits. Stevens found them in pairs haunting shrubs in dense forest between 6,000 and 9,000 feet elevation.

Subfamily SIBIINÆ*.

This subfamily differs from the *Timaliinæ* in having longer wings and comparatively shorter, weaker tarsi and feet. Together with these features they have different habits, as one would have expected. They are strictly arboreal, seldom, if ever, feeding on the ground, nor do they scramble and climb about the undergrowth but hop from one branch to another, take easily to flight, and are not nearly so noisy as the last group of birds.

The sexes are alike in plumage and often brightly coloured.

This subfamily remains much as in Blanford and Oates, but the genus *Zosterops* is removed *en bloc* to a family by itself, *Zosteropidæ* of Sharpe.

The genus *Actinodura* I retain in this subfamily with some doubt, as in many ways it approaches the previous subfamily, especially in its nidification, but on the whole it appears to be properly placed where it is.

Key to Genera.

A. Tail nearly twice the length of wing........ SIBIA, p. 295.
B. Tail and wing not differing much in length.
  a. Tail-feathers graduated.
    a'. All the tail-feathers graduated.
      a''. Tail longer than wing; the outer tail-feathers falling short of tip of tail by a distance equal to length of tarsus.
        a'''. Wings not barred .... LEIOPTILA, p. 296.
        b'''. Wings barred .... ACTINODURA, p. 303.
      b''. Tail not longer than wing; the outer tail-feathers falling short of the tip of tail by less than the length of tarsus.
        c'''. Nostrils not overhung by hairs; wings barred .... IXOPS, p. 307.
        d'''. Nostrils overhung by hairs and wings not barred .... STAPHIDIA, p. 309.

---

* The subfamily *Brachypteryginæ* does not belong to the *Timaliidæ* at all. Oates realized their close connection with the *Turdidæ* but placed them in his *Crateropodidæ* on the ground that the plumage of the young was like that of the parent, whereas it has been proved that in *Larvivora*, *Brachypteryx* and *Drymochares* all have spotted young. The genera *Myiophoneus* and *Arrenga* are true Thrushes; *Elaphrornis* appears to be a Warbler somewhere near *Tribura*; *Tesia* and *Oligura* are Wrens, *Troglodytidæ*; and the other genera short-winged Chats which may be retained in a subfamily, *Brachypteryginæ*, in the *Turdidæ*. All these genera will be found in their appropriate places in future volumes.

b′. The two outer pairs only of tail-feathers graduated .... SIVA, p. 312.

a. Tail square and not graduated.

c′. Bill slender, gently curved and both mandibles of the same length .... YUHINA, p. 316.

d′. Bill stout and straight, the upper mandible longer than the lower one, with the tip bent down.

e″. Depth of bill at nostrils less than breadth .... IXULUS, p. 321.

d″. Depth of bill at nostrils more than breadth .... ERPORNIS, p. 324.

Genus SIBIA Hodgson, 1836.

The genus *Sibia* contains but one species, which is remarkable for the extraordinary length of its tail, which is twice as long as the wing and greatly graduated.

The bill is shorter than the head, slender and curved, and the nostrils are covered by a large membrane. The rictal bristles are moderate in length. The bill is similar to that of *Leioptila*, figured below.

(310) Sibia picaoides picaoides.

THE LONG-TAILED SIBIA.

Sibia picaoides Hodgs., J. A. S. B., viii, p. 38 (1839) (Nepal); Blanf. & Oates, i, p. 195.

Vernacular names. *Matcheo-pho* (Lepcha).

Description. Whole upper plumage, wings and tail deep slaty-brown, the tail tipped with white and the wings with a white patch formed by a spot on each outer web of four of the secondaries; forehead and lores blackish; throat and breast slaty-brown; remainder of lower plumage ashy-grey, becoming albescent on the abdomen.

Colours of soft parts. Iris red or crimson, occasionally brown; bill black or horny-black; legs dusky grey, claws horny-black.

Measurements. Total length about 340 mm.; wing 120 to 125 mm.; tail about 210 to 220 mm.; tarsus about 30 mm.; culmen about 24 mm.

Distribution. Nepal and Sikkim to Assam North and South of the Brahmaputra; Chin Hills, Kachin Hills, Shan States and Karenni to Tenasserim.

Nidification. A nest taken by Mr. H. Stevens in Sikkim at about 8,000 feet elevation, where this Sibia was common and no others were present, was assuredly of this bird though the owner of it was not shot. It was a compact nest made entirely of moss, lined with moss roots and was placed at the end of the branch of a pine-tree. The one egg it contained measured 24·5×18·3 mm. and is exactly like those of *Leioptila gracilis*, described further on.

Habits. This beautiful Sibia is not uncommon from 3,000 to 8,000 feet, frequenting forests in small parties or in pairs and feeding largely on the insects which are found in flowering trees, such as the cotton-tree etc. They are not noisy birds but frequently utter a note which Jerdon terms "a sort of whistling call," shrill but not unpleasant. According to Stevens it is found in the foot-hills in Lakhimpur in January and February in flocks numbering as many as twenty.

Genus LEIOPTILA Blyth, 1847.

Differs chiefly from *Sibia* in its much shorter tail; this is longer than the wing and well graduated, the outermost feather reaching a little beyond the middle of the tail. The rictal bristles are a little longer than in *Sibia* and there is a full crest in all the species.

Key to Species and Subspecies.

A. Crown of head black or brown.	
a. Median pair of tail-feathers with a subterminal black band.	
a'. Rump and upper tail-coverts rufous.	[p. 296.
a''. Darker; breast rufous........	*L. capistrata capistrata*,
b''. Paler; breast pale pinkish-rufous	*L. c. pallida*, p. 298.
b'. Rump and upper tail-coverts ashy.	*L. gracilis*, p. 298.
b. Median pair of tail-feathers uniform brown or black with a white tip.	
c'. Rump and upper tail-coverts chocolate-brown.	
c''. Inner secondaries black.	
a'''. Upper plumage brownish black	*L. m. melanoleuca*, p. 299.
b'''. Upper plumage deeper black.	*L. m. radcliffei*, p. 300.
d''. Inner secondaries chiefly chestnut	*L. castanoptera*, p. 300.
d'. Rump chestnut.	
e''. Wing-coverts margined with ashy and chestnut.	[p. 300.
c'''. Chestnut of back paler	*L. annectens annectens*,
d'''. Chestnut of back darker....	*L. a. saturata*, p. 301.
f''. Wing-coverts entirely black ..	*L. a. davisoni*, p. 302.
B. Crown of head bluish-grey like the upper back	*L. pulchella pulchella*, p. 302.

(311) Leioptila capistrata capistrata.

THE BLACK-HEADED SIBIA.

Cinclosoma capistratum Vigors, P. Z. S., 1831, p. 56 (Himalayas) (Darjiling).
Lioptila capistrata. Blanf. & Oates, i, p. 196.

Vernacular names. *Sambriak-pho* (Lepcha); *Sesigona* (Bhut.); *Sibya* (Nep.).

Description. Forehead, crown, crest, nape and sides of the head black, the ear-coverts sometimes dark brown; the whole lower plumage, rump and upper tail-coverts and a broad collar round the neck deep bright rufous; back and scapulars greyish-brown: median tail-feathers rufous for three-quarters of their length, then with a dark band and a bluish tip; in the other feathers the rufous portion rapidly diminishes and the black increases; lower wing-coverts rufous; primary-coverts black; greater coverts white at base, forming a broad band, the exterior feathers blue tipped with black, the others tipped with rufous; inner secondaries chestnut edged with blue; the other quills dark brown, the primaries with the outer webs pale blue, the outer secondaries dark blue.

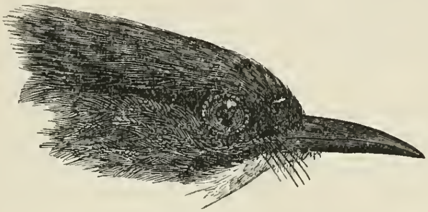


Fig. 55.—Head of *L. c. capistrata.*

Colours of soft parts. Iris reddish-brown to brilliant crimson, perhaps according to age; bill black; legs fleshy-grey to purplish-brown, claws horny-brown.

Measurements. Total length about 220 to 230 mm.; wing 91 to 96 mm.; tail about 100 mm.; tarsus about 30 mm.; culmen about 20 mm.

Distribution. Eastern Himalayas, Naini-tal to Dafla Hills.

Nidification. The Black-headed Sibia breeds during May and June at elevations between 5,000 and 7,000 feet, making a very compact, deep cup of moss, sometimes mixed more or less with scraps of dead leaf, lichen, etc. Between the outer nest and the true lining of fine roots and fern-rachides is an inner lining of soft grass and shreds of fibre and leaves. The nest is very hard to locate, as it is generally high up in pine-, fir-, or deodar-trees in the bushy extremities of the outer branches. The eggs are generally two, more rarely three, and are pale blue in ground-colour with splashes, smears and blotches of pale and dark brownish-red with a few spots and hair-lines of very dark red-black. The shell is fine but not glossed, they are fragile eggs for their size and in shape they are rather broad blunt ovals. They measure about 24·1×19·1 mm.

Habits. This Sibia is found in flocks, often of some size, in tree-forest between 5,000 and 8,000 feet elevation, wandering a good deal lower in the cold weather. They are entirely arboreal

and keep much to the higher branches of firs, spruce and similar trees, using their wings far more and their feet far less than birds of the preceding sub-family; at the same time their flight is dipping and slow, nothing like that of the *Turdidæ*. They are rather noisy birds, but their notes are very pleasing and Hutton says their "loud, ringing call *titteree, titteree, tueëyo* quickly repeated may be constantly heard on wooded banks during summer."

(312) Leioptila capistrata pallida.

THE PALE SIBIA.

Lioptila capistrata pallida Hartert, Kat. Vög. Senckenb. Mus., p. 21 (1891) (Simla).

Vernacular names. None recorded.

Description. Differs from *L. c. capistrata* in being paler everywhere and in having the lower parts a pale, almost pinkish rufous.

Colours of soft parts and **Measurements** as in the last.

Distribution. N.W. Himalayas, Hazara to Garhwal.

Nidification. The nest and eggs cannot be distinguished from the last but Mr. A. E. Jones has taken some very beautiful erythristic clutches in Simla. Twenty-four eggs average about 25·0 × 18·1 mm.

Habits. Found from 5,000 to 9,000 feet elevation in the same kind of haunts as the last bird.

(313) Leioptila gracilis.

THE GREY SIBIA.

Hypsipetes gracilis McClell., P. Z. S., 1839, p. 159 (Assam).
Lioptila gracilis. Blanf. & Oates, i, p. 197.

Vernacular names. None recorded.

Description. Forehead, crown and lores black, paling on the nape and ear-coverts and blending with the rich slaty-brown of the hind neck, back and scapulars; rump and upper tail-coverts ashy-grey; lesser, median and primary coverts, and outer feathers of the greater coverts black; remaining greater coverts and innermost secondaries bluish-ashy, edged with black, and the basal portions more or less white; quills black, the earlier primaries edged with hoary-grey on the outer webs; central tail-feathers bluish-grey with subterminal black bands, the black bands and grey tips increasing in extent until the outermost feathers are entirely black with grey tips; chin, throat and cheeks white, becoming fulvous on the breast and abdomen, the sides of which are washed with lilac; vent and under tail-coverts buff.

Colours of soft parts. Iris red to bright crimson, reddish-brown in young birds; bill black; legs and feet brown to brownish-black, the feet and claws darker still.

Measurements. Total length about 235 to 245 mm.; wing 92 to 97 mm.; tail about 130 to 140 mm.; tarsus about 30 mm.; culmen about 20 mm.

Distribution. Hills South of the Brahmaputra, Manipur and Chin Hills.

Nidification. This bird breeds freely in the Khasia Hills, where it is common between 4,000 and 6,000 feet. In the early sixties Godwin-Austen took its nest in the Umiam Valley and the next nest was taken by myself in 1905 in the same spot; since then many nests have been taken, all in pine-trees and all built in the thick tufts at the ends of branches. They are made of green moss and lined with roots and are rather massive and well-built cups. The eggs are generally two only in number, sometimes three and very rarely four. In appearance they are very like weakly coloured Blackbirds' eggs, pale greyish or greenish blue, lightly freckled and blotched all over with pale reddish; a few eggs approach the *Actinodura* type of egg with bolder markings and spots. Sixty eggs average 23·9 × 17·7 mm. The breeding season lasts from the middle of May to July and the birds may be found during these months anywhere between 4,000 feet and the highest peaks.

Habits. The Grey Sibia is essentially a bird of pine-forests, outside of which it is but rarely met with except in the cold weather months, when it wanders down to about 3,000 feet in any kind of tree-forest. It flies fairly well, haunting the tops of the pines in small flocks or pairs, working the branches for insects as assiduously as other species of this family. Its call is a fine, clear treble note but it has many others of a conversational character though it is not a noisy bird.

(314) Leioptila melanoleuca melanoleuca.

TICKELL'S SIBIA.

Sibia melanoleuca Tickell, Blyth, J. A. S. B., xxviii, p. 413 (1859) (Muleyit Mt.).
Lioptila melanoleuca. Blanf. & Oates, i, p. 198.

Vernacular names. None recorded.

Description. Ear-coverts very dark brown; forehead, crown, nape and rest of the sides of the head black; back, scapulars, lesser and median wing-coverts, rump and upper tail-coverts chocolate-brown, tinged with ashy on the two latter parts; wing-quills and greater coverts black; tail dark brown, the outer webs edged black and all the feathers tipped with white; entire lower plumage white.

Colours of soft parts. Iris lake; bill black; legs and feet dark reddish-brown to dark purplish-brown or brownish black (*Hume & Dav.*).

Measurements. Length about 220 mm.; wing 87 to 90 mm.; tail about 120 mm.; tarsus about 28 mm.; culmen about 17 mm.

Distribution. From Mulai-yit Mountain in Tenasserim, possibly through Siam to the Shan States and Ruby Mines district.

Nidification. Davison obtained a nest of this bird on Mulai-yit made of bamboo leaves, grass, moss and other materials and placed in a small branch of a high tree growing in a ravine. It was taken on the 21st February and contained three eggs, pale spotless blue and measuring about 29·3×17·0 mm.

Habits similar to those of the last bird. Davison describes its note as a single, long-drawn, clear-sounding whistle.

(315) Leioptila melanoleuca radcliffei, ? subsp. nov.

RADCLIFFE'S SIBIA.

Vernacular names. None recorded.

Description. Differs from *L. m. melanoleuca* in having the whole upper parts glossy black with no trace of brown.

Colours of soft parts and **Measurements** as in the last bird.

Distribution. There are only three specimens from N.E. Central Burma in the British Museum and one in the Bombay Natural History Society's Museum from Taunghoo. These are marked *Lioptila radcliffei*, but there is nothing to show by whom the name was written or where it has been published, if at all.

Nidification and **Habits.** Not recorded.

(316) Leioptila castanoptera.

FEA'S SIBIA.

Malacias castanoptera Salvadori, Ann. Mus. Civ. Gen., (2) vii, p. 363 (1889) (Monte Carin).
Lioptila castanoptera. Blanf. & Oates, i, p. 199.

Vernacular names. None recorded.

Description. Resembles Tickell's Sibia but is a darker bird and has the greater part of the inner secondaries and greater coverts chestnut.

Colours of soft parts. Iris crimson; bill and legs black.

Measurements. A rather larger bird than the last; wing 89 to 95 mm.

Distribution. Karenni and Western Shan States.

Nidification and **Habits.** Nothing recorded.

(317) Leioptila annectens annectens.

BLYTH'S SIBIA.

Leioptila annectens Blyth, J. A. S. B., xvi, p. 450 (1847) (Darjeeling).
Lioptila annectens. Blanf. & Oates, i, p. 199.

Vernacular names. *Rubnun-pho* (Lepcha).

Description. Upper part of head and hind neck black, the

latter streaked with white; sides of the back black; scapulars pale rufous; middle of back, rump and upper tail-coverts chestnut, the latter with a few black streaks; lesser and median wing-coverts black edged with ashy; greater coverts black tipped with chestnut; primaries black, edged on the outer webs of all but the last two or three with bluish-white, secondaries the same but with broader edges and the innermost tipped with white and with some chestnut on the outer web; tail black, edged with still deeper black on the basal half and tipped with white, the white increasing in extent outwardly; lower plumage white, except the vent, flanks and under tail-coverts which are chestnut.

Colours of soft parts. Iris grey-brown in the young to chocolate-brown and deep crimson in the adult; bill black, the extreme base of the lower mandible yellow; legs and feet wax- or chrome-yellow, claws brownish.

Measurements. Total length about 190 mm.; wing 75 to 80 mm.; tail about 85 to 87 mm.; tarsus about 24 mm.; culmen about 15 to 16 mm.

Distribution. Sikkim, Assam North and South of the Brahmaputra, Manipur and Chin Hills.

Nidification. This graceful Sibia breeds from 4,000 feet to the top of the highest hills South of the Brahmaputra, placing its nest on the small outer branches of trees, sometimes at great heights, sometimes in quite small saplings not 20 feet from the ground. In shape it is a deep cup of moss, mixed with a few leaves and roots with an inner lining of grass and reed-stems and a true lining of fine roots and fern-rachides. It is placed without any attempt at concealment and even if not spotted at once the excited actions of the birds soon draw one's attention to it. The eggs, which number either two or three, are pale blue with blots, blotches and specks of pale reddish-brown and a few hair-lines of the same or darker. Twenty-five eggs average 22·0×15·5 mm. The breeding season is May and June.

Habits. Blyth's Sibia is a bird of the evergreen forests above 4,000 feet, descending but little lower even in the cold season. It climbs, creeps and flutters amongst the higher branches of the trees in hunting for food and is generally found in small parties of five or six individuals. Their note is a clear, single whistle but they are quite unobtrusive birds, though not very shy.

(318) Leioptila annectens saturata.

WALDEN'S SIBIA.

Lioptila saturata Walden, Ibis, 1875, p. 352 (Karennee).

Vernacular names. None recorded.

Description. Similar to the last but differs in having the back a richer, deeper chestnut.

Distribution. The eastern hills of Burma, Kachin Hills and Shan States to Karenni.

Nidification and Habits. Nothing recorded.

(319) Leioptila annectens davisoni.

DAVISON'S SIBIA.

Lioptila davisoni Hume, S. F., v, p. 110 (1877) (Muleyit Mt.); Blanf. & Oates, i, p. 200.

Vernacular names. None recorded.

Description. Differs from *L. a. annectens* in having the back and wing-coverts black and the rump and upper tail-coverts mingled black and deep ferruginous maroon.

Colours of soft parts. Iris crimson; bill black; legs horny-brown.

Measurements about the same as in the other races or a trifle smaller; wing about 75 mm.

Distribution. Tenasserim.

Nidification unknown.

Habits. Davison says: "I only found this bird at Muleyit, quite near the top, usually in pairs, sometimes singly. I found it generally about the large trees surrounding the 'Sakans' or camping-grounds, strange to say, climbing about the trunk and branches much after the manner of a Nuthatch. I have also seen it hunting about the leaves and smaller branches of the tree-tops. Those I killed had eaten only insects."

(320) Leioptila pulchella pulchella.

THE BEAUTIFUL SIBIA.

Sibia pulchella Godw.-Aust., A. M. N. H., (4) xiii, p. 160 (1874) (Kunho, Naga Hills).
Lioptila pulchella. Blanf. & Oates, i, p. 200.

Vernacular names. None recorded.

Description. The whole upper plumage and smaller wing-coverts bluish-grey, brighter on the head; median tail-feathers umber-brown, with a subterminal black band and a dark grey tip; the black gradually increasing in extent until the outermost feathers are nearly all black with grey tips; greater coverts next the back entirely chocolate-brown changing to black on the outer coverts, winglet and primary-coverts; primaries black broadly edged with bluish-grey; outer secondaries with darker grey edges and inner secondaries umber-brown, edged with black on the outer webs; lores and round the eye black; ear-coverts mixed bluish-grey and black; lower plumage ashy-blue, tinged with vinous.

Colours of soft parts. Iris crimson; bill black; legs horny-brown.

Measurements. Total length about 230 mm.; wing 100 to 105 mm.; tail about 120 mm.; tarsus about 33 mm.; culmen about 20 mm.

Distribution. The Hills South of the Brahmaputra above 5,000 feet, Toropatu Peak, Dafla Hills.

Nidification unknown.

Habits. This Sibia frequents only the higher ranges. In some parts of the Naga Hills at about 7,000 to 9,000 feet it is not rare and it wanders, probably only in winter, into Cachar and the Khasia Hills on the peaks and ridges between 5,000 and 6,000 feet. Godwin-Austen says that it is found in companies of about half-a-dozen, haunting the tops of rhododendron-trees, the flowers of which it searches busily for insects. The only call I heard was a very loud, shrill whistle, less musical than the notes of this genus generally are. They are extremely active birds like all the others.

Genus **ACTINODURA** Gould, 1836.

The genus *Actinodura* only differs from *Leioptila* in its shorter, less slender bill and in life they have a stouter, rather stronger tarsus, though this is not visible in dried skins.

The bill is about half the length of the head, the rictal bristles are long and the tail is considerably longer than the wing and well graduated as in *Leioptila*.

There are in India and Burma two species which vary considerably in different geographical areas.

Key to Species and Subspecies.

A. No white ring round eye.
  a. Forehead and fore crown chestnut; back reddish-olive ... . *A. egertoni egertoni*, p. 303.
  b. Forehead rufous; crown like the back.
    a'. Back ochraceous .... *A. e. khasiana*, p. 304.
    b'. Back greyish-olive................ *A. e. ripponi*, p. 305.
B. A conspicuous ring of white feathers round the eye.
  c. Crown and back ashy olive-brown .... *A. ramsayi ramsayi*, [p. 305.
  d. Crown tinged with rufous; back more ochraceous .... *A. r. radcliffei*, p. 306.

(321) Actinodura egertoni egertoni.

THE NEPAL BAR-WING.

Actinodura egertoni Gould, P. Z. S., 1836, p. 18 (Sikkim); Blanf. & Oates, i, p. 201.

Vernacular names. *Ramnio-pho* (Lepcha).

Description. Crest rich ashy-brown; forehead, lores, round the eye, cheeks and chin rufous; ear-coverts, sides of the neck and mantle brown, paler than the crest; smaller wing-coverts, rump, back and upper tail-coverts reddish brown; primary-coverts almost entirely black; greater coverts chestnut; inner webs of primaries and outer secondaries brown, the outer webs ashy with chestnut

bases and black bars; inner secondaries silky-brown, narrowly barred with black; outer tail-feathers brown, barred with black and tipped with white; the middle pair reddish brown, obsoletely barred and the intervening ones gradually changing from the one to the other; throat and upper breast pinkish-fulvous; remainder of lower plumage fulvous, the centre of the abdomen whitish and the under tail-coverts tipped with white.

Colours of soft parts. Iris brown or reddish brown; bill pale horny-brown, darker on culmen, paler on gonys; legs and feet pale sienna or pale brown.

Measurements. Total length about 220 to 230 mm.; wing 80 to 85 mm.; tail about 105 to 115 mm.; tarsus about 28 mm.; culmen about 15 mm.

Distribution. Nepal, Sikkim and Dafla Hills.

Nidification. The Nepal Bar-wing breeds between 4,000 and 8,000 feet in May and June, making a compact cup-shaped nest of grass, leaves and bamboo leaves mixed with roots and tendrils and lined with finer roots and rhizomorph. Outside there is always a certain amount of moss and often a great deal, whilst in some instances this material is largely used in the nest itself. It measures between 4 and 6 inches in diameter and is almost as deep as wide, though occasionally a more shallow-shaped nest may be taken. It is placed in saplings, small trees or high bushes 10 to 25 feet from the ground and most often in fairly dense forest. The eggs number two or three, very rarely four, and are a pale blue-green in colour with rather smeary lines, blotches and smudges of reddish brown with secondary markings of pale lilac-grey. The texture is fine but not very glossy, the shape an obtuse oval and twenty-five eggs average 22·8 × 17·5 mm. in measurement.

Habits. In habits these birds differ little from those of the genus *Leioptila*. Hume remarks that they go about in small parties and are quite tree-birds, clambering about and poking into every hole and cranny and foraging about much like Tits in the huge bunches of orchids and other parasites. They are rather noisy birds but most of their notes are mellow and pleasant. They are mainly insectivorous in their diet, perhaps wholly so.

(322) Actinodura egertoni khasiana.

THE SHILLONG BAR-WING.

Actinodura khasiana Godw.-Aust., J. A. S. B., xv, pt. ii, p. 76 (1876) (Shillong).

Vernacular names. None recorded.

Description. Differs from the last bird in the lighter crown, the rufous of the forehead is paler and does not extend on to the crown as it does in that bird; the back, rump and upper tail-

coverts are much more ochraceous and the central tail-feathers are much more distinctly barred.

Colours of soft parts and **Measurements** as in the last bird.

Distribution. Hills South of the Brahmaputra in Assam to Manipur.

Nidification. Similar to that of the last bird but breeds at a lower elevation, *i. e.* between 3,500 and 6,000 feet. The eggs cannot be distinguished from those of the last bird and are like poorly coloured, weakly marked specimens of those of *Trochalopterum phœniceum*. One hundred eggs average 23·4×17·7 mm., and the extremes are **25·0**×18·4, **21·7**×17·4 and **22·0**×**17·0** mm.

Habits. This is a very common bird over all the Western Hills South of the Brahmaputra but much more rare to the East. It wanders about in parties of half-a-dozen to a dozen or so, keeping principally to the tree-tops and bigger trees, as described by Hume when referring to the last bird but sometimes haunting the lower cover when there is any special attraction. In N. Cachar they were found occasionally feeding on the ground amongst strawberries, which were infested with a little black fly. In these latter cases we found the stomachs contained a mass of crushed strawberries and flies, the birds evidently swallowing them together. They were not shy birds and allowed quite close observation without moving away but they were always most restless and quick in their motions.

(323) Actinodura egertoni ripponi.

RIPPON'S BAR-WING.

Actinodura ripponi Ogilvie-Grant, Ibis, 1907, p. 166 (Mt. Victoria).

Vernacular names. *Pong-prap* (Kachin).

Description. Similar to *A. e. khasiana* but with the crown dark grey as in *A. e. egertoni* and the back, rump and upper tail-coverts olive-green.

Colours of soft parts and **Measurements** as in the other races.

Distribution. Chin and Kachin Hills.

Nidification and **Habits** differ in no way from those of the two other birds. Ten eggs taken by Harington, Mackenzie, Grant and others average 23·0×17·5 mm. Harington obtained their nests from bamboo clumps.

(324) Actinodura ramsayi ramsayi.

RAMSAY'S BAR-WING.

Actinodura ramsayi Walden, A. M. N. H., (4) xv, p. 402 (1875) (Karennee); Blanf. & Oates, i, p. 202.

Vernacular names. None recorded.

Description. Upper plumage ashy olive-brown, tinged with ferruginous on the head and more so on the forehead, the feathers of the back, rump and upper tail-coverts faintly cross-barred with black; lores dusky; a conspicuous ring of white round the eye; sides of head ashy; primary-coverts black; inner secondaries and other wing-coverts olive-brown, distinctly barred with black; outer webs of primaries and outer secondaries chestnut on the basal, ashy on the terminal halves, barred with black; tail olive-brown, distinctly barred with numerous narrow black bars, the bars increasing in width on the outer feathers; all the tail-feathers tipped with white; whole lower plumage ochraceous buff, becoming browner on the under tail-coverts.

Colours of soft parts. Iris light hair-brown; bill horny-brown; legs slaty-brown (*Wardlaw-Ramsay*).

Measurements. Total length 230 to 240 mm.; wing 86 to 90 mm.; tail about 120 to 130 mm.; tarsus about 28 mm.; culmen about 18 mm.

Distribution. The Southern Shan States and Karenni.

Nidification unknown.

Habits. Rippon records of this bird in the Shan States: "The habits of this bird are very like those of *Leioptila castanoptera*; it hops rapidly from branch to branch, frequently uttering its call. The call of *L. castanoptera* is three notes in the minor in a descending scale, preceded by a flourish; that of *A. ramsayi* is the same without the flourish." It is found in heavy forest or brushwood between 3,000 and 5,000 feet elevation.

(325) Actinodura ramsayi radcliffei.

THE RUBY MINES BAR-WING.

Actinodura ramsayi radcliffei Harington, Bull. B. O. C., xiii, p. 9 (1910) (Ruby Mines).

Vernacular names. None recorded.

Description. "Differs from *A. ramsayi* in having the fore part of the head and crest darker ferruginous, the general colour of the upper parts ochraceous; the abdomen is conspicuously white, and the feathers of the throat have rather conspicuous shaft-streaks."

Colours of soft parts. "Iris brown; bill dark brown; legs pale brown."

Measurements. "Total length about 246 mm.; culmen 20 mm.; wing 91·4 mm.; tail 127 mm.; tarsus 30·5 mm."

Distribution. "The type, the only specimen obtained, was shot by Col. H. Delmé-Radcliffe in the Ruby Mines District, Upper Burma."

Nidification and **Habits** unknown.

Genus IXOPS Hodgson, 1844.

The genus *Ixops* is very close to *Actinodura*, differing only in having a comparatively shorter tail and the tail-feathers less graduated. Species of this genus extend from Nepal eastwards to Formosa. In the case of this genus it is not easy to decide whether the different forms should be treated as species or subspecies. There are four quite distinct birds in which the material at present available shows no intergrading. These are two rufous-breasted birds, one striped and one unstriped, a third striped grey bird and a fourth with a grey breast with brown centres. There seems, however, to be no intervening area in which a half-way form occurs. At the same time no two of these forms are found breeding in the same area and, therefore, for the present, I keep them as geographical races, or subspecies, only.

Ixops nipalensis.

Key to Subspecies.

A. Chin, throat and breast not striped; head with pale streaks .... *Ixops nipalensis nipalensis*, [p. 307.

B. Chin, throat and breast streaked; feathers of head with pale edges.

a. Chin, throat and breast rufous with darker centres.

a'. Upper parts rufous; ear-coverts silvery-grey .... *Ixops n. waldeni*, p. 308.

b'. Upper parts deep rufous or maroon-brown; ear-coverts dark grey .... *Ixops n. poliotis*, p. 309.

b. Chin, throat and breast grey with brown centres .... *Ixops n. daflaensis*, p. 309.

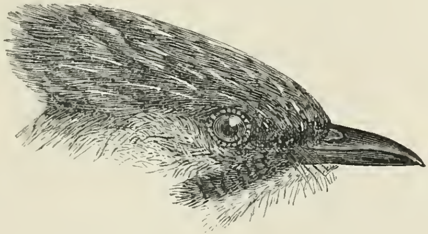


Fig. 56.—Head of *I. n. nipalensis*.

(326) Ixops nipalensis nipalensis.

THE HOARY BAR-WING.

Cinclosoma nipalensis Hodgs., As. Res., xix, p. 145 (1836) (Nepal).
Ixops nepalensis. Blanf. & Oates, i, p. 203.

Vernacular names. *Ramnio-pho* (Lepcha).

Description. Forehead and crest coffee-brown, with long pale

rufous shaft-streaks; sides of neck, mantle, back and lesser wing-coverts rufescent brown, with indistinct pale shaft-lines; rump and upper tail-coverts more rufous and unstreaked; primary-coverts black; greater coverts rufous tipped with hoary; quills chestnut, barred with black on the outer webs; innermost rufescent and barred on both webs; the outer webs of the first few primaries more or less ashy: basal portion of tail castaneous, barred with black, the chestnut decreasing in extent on the outer feathers, the other portions black, tipped with white; ear-coverts and lores pale grey; cheeks black, the black continuing back below the ear-coverts: chin, throat and breast fulvous-ashy, turning to ferruginous on the flanks, lower abdomen and under tail-coverts.

Colours of soft parts. Iris brown, eyelid bluish grey; bill brownish black; feet brownish-fleshy, claws livid (*Scully*).

Measurements. Length about 200 mm.; wing 84 to 91 mm.; tail about 80 to 85 mm.; tarsus about 30 mm.; culmen 17 to 18 mm. As usual with the *Timaliidæ*, the female is decidedly smaller than the male.

Distribution. Nepal, Sikkim and Bhutan.

Nidification. Hodgson notes that this Bar-wing breeds between 4,000 and 6,000 feet in Sikkim and Nepal but the nest and eggs he describes in no way resemble any other birds of this group, and judging from the very close connection of this genus with the genus *Actinodura* there is possibly some mistake. Other observers say that in the breeding season they haunt mountains nearer the 8,000-foot levels.

Habits. Jerdon says that it is more arboreal than birds of the last genus and that it feeds chiefly on insects which it obtains from the higher parts of moderate-sized trees, especially those with insect-infested flowers such as rhododendrons. He gives its habitat as from about 7,000 to 10,000 feet upwards.

(327) Ixops nipalensis waldeni.

WALDEN'S BAR-WING.

Actinodura waldeni Godw.-Aust., P. Z. S., 1874, p. 46 (Japvo Peak, Naga Hills).

Ixops waldeni. Blanf. & Oates, i, p. 204.

Vernacular names. None recorded.

Description. Feathers of head darker than in the last bird and unstreaked but with pale edges; the upper plumage is rufous, also unstreaked; the whole lower plumage is rufous, the feathers of the chin, throat and breast with pale edges, giving a streaked appearance; ear-coverts silvery-grey with fine dark centres.

Colours of soft parts. Iris pale grey; bill grey; legs and feet fleshy-brown (*Godw.-Aust.*).

Measurements as in the preceding race.

Distribution. Naga Hills and Manipur.

Nidification and Habits. Nothing recorded beyond the fact that it is found up to 9,000 feet and frequents the tops of trees.

(328) Ixops nipalensis poliotis.

THE CHIN HILLS BAR-WING.

Ixops poliotis Rippon, Bull. B. O. C., xv, p. 97 (1905) (Mt. Victoria).

Vernacular names. None recorded.

Description. Similar to *I. n. waldeni* but much darker above, almost a maroon-brown; the ear-coverts are darker grey with broader brown centres.

Colours of soft parts and Measurements as in the last bird.

Distribution. Chin Hills, Mt. Victoria.

Nidification and Habits. Nothing recorded.

(329) Ixops nipalensis daflaensis.

AUSTEN'S BAR-WING.

Actinodura daflaensis Godw.-Aust., A. M. N. H., (4) xvi, p. 340 (1875) (Dafla Hills).
Ixops daflaensis. Blanf. & Oates, i, p. 204.

Vernacular names. None recorded.

Description. Similar to *I. n. waldeni* but a darker, duller chestnut above and the chin, throat and breast-feathers grey with reddish-brown central streaks, the whole effect being grey, not rufous; ear-coverts a rather darker grey.

Colours of soft parts and Measurements as in the Hoary Bar-wing.

Distribution. Dafla and Miri Hills.

Habits. There is nothing on record beyond the fact that Godwin-Austen shot it in high forest on Shengorh Peak at about 7,000 feet.

Genus STAPHIDIA Swinhoe, 1871.

The members of the genus *Staphidia* are found in the hilly regions of North-Eastern India, Burma and China and again in Borneo. Two species are found within our limits, one of which is represented by two geographical races.

In *Staphidia* the bill is short and thick and resembles that of *Ixulus*, figured below; the nostrils are overhung by a few long hairs; the rictal bristles are short and the head is crested. The tail is comparatively long and much graduated. Some species of this genus have been wrongly retained in *Ixulus* by Indian authors, the square tail of *Ixulus* at once separating it from the rounded tail of *Staphidia*.

In this genus the first three primaries are graduated, the third and fourth being subequal.

Key to Species and Subspecies.

A. Crown chestnut-rufous .... *S. castaneiceps*, p. 310.
B. Crown dark brown, no supercilium .... *S. striata striata*, p. 311.
C. Crown dark grey with white supercilium .. *S. s. rufigenis*, p. 311.

(330) Staphidia castaneiceps.

THE CHESTNUT-HEADED STAPHIDIA.

Ixulus castaneiceps Moore, P. Z. S., 1854, p. 141 (Afghanistan *in errore*) (Cachar).
Staphidia castaneiceps. Blanf. & Oates, i, p. 205.

Vernacular names. *Dao-tisha-magini* (Cachari).

Description. Forehead chestnut-brown, the feathers margined with grey; crown and crest chestnut; upper plumage and visible portions of wings and tail greenish brown, the back and scapulars with white shafts; middle tail-feathers and concealed webs blackish brown, outer feathers broadly tipped white, the tips decreasing in extent until they disappear in the central ones; lores grey; a short supercilium from above the eye white; ear-coverts chestnut with whitish shafts; lower plumage and under wing-coverts pale fulvous white; under tail-coverts brown tipped with white.

Colours of soft parts. Irides pale hazel; bill rather light reddish-horny, gape and base of both mandibles purplish; legs dull reddish or flesh-colour, claws dusky flesh-colour.

Measurements. Length about 135 mm.; wing 66 to 70 mm.; tail about 58 mm.; tarsus about 14 mm.; culmen about 7·5 to 8 mm.

Distribution. Assam Hills South of the Brahmaputra as far East as the Naga Hills and South to Lushai. According to Godwin-Austen this bird has also been found in the Dafla Hills.

Nidification. This pretty little Babbler breeds all over its range between 2,000 and 5,000 feet, principally about 3,000 feet. The breeding season begins in the middle of April and ends in the middle of July and the nest is nearly always placed in holes in small perpendicular banks, those beside paths cut through the jungle being a very favourite site. They are placed only just inside the hole, often very indifferently concealed, and are made of some very soft fibrous material like tow, the surrounding portion of the nest being of weed stems, moss and leaves, more or less mixed with shreds of grass. The eggs number three or four and are broad, obtuse ovals, pure glossy white with fairly numerous specks and spots of vandyke-brown or reddish-brown, sometimes scattered over the whole surface, sometimes confined for the most part to the larger end, where they may form a rough ring or cap. 150 eggs average 16·6 × 13·5 mm., the extremes being **18·0** × 14·0; 16·2 × **14·2** mm.; **15·0** × 13·0 and 15·2 × **12·3** mm.

Habits. It is found during the non-breeding season in small flocks, the individuals keeping very near to one another. They keep closely to the tops of the higher bushes and smaller saplings,

neither ascending to any height in the bigger trees nor frequenting the lower shrubs unless frightened, when they dive into the undergrowth and escape by clambering and flitting from one perch to another until they are out of sight. It is not a shy bird and may be watched at leisure from a few paces, scrambling about in very Tit-like postures and constantly uttering a low "chir-chit, chir-chit." It is a very poor flyer and seldom uses its wings for more than a few yards. Those birds examined had fed on aphidæ, locust larvæ and other insects and also on small hard seeds like mustard seed.

(331) Staphidia striata striata.

Tickell's Staphidia.

Ixulus striatus Blyth, J. A. S. B., xxviii, p. 413 (1859) (Tenasserim).
Staphidia striata. Blanf. & Oates, i, p. 206.

Vernacular names. None recorded.

Description. General colour above dull olive-brown, the head darker with a greyish tinge, in some specimens a sooty-brown; the feathers of the head, mantle and back with grey shaft-stripes; ear-coverts dull chestnut and sides of the neck suffused with the same; wings and tail the same colour as the back but darker; the three or four outer pairs of tail-feathers broadly tipped with white; under parts dull greyish white.

Colours of soft parts. Iris blood-red brown; bill dark horn-colour; legs reddish-horn.

Measurements. Length about 130 mm.; wing 60 to 63 mm.

Distribution. Tenasserim northwards through the hills of Eastern Burma to Bhamo in the Chin Hills.

Nidification. Very similar to that of the last bird and Mr. S. M. Robinson records that this species like that form is also much given to nesting in holes in the roadside banks. The nest is like that of the Chestnut-headed Staphidia but more moss is used in its outer walls. The few eggs I have seen are not distinguishable from those of that bird. They measure about 17·7 × 13·7 mm.

Habits. Similar to those of the preceding species.

(332) Staphidia striata rufigenis.

Hume's Staphidia.

Ixulus rufigenis Hume, S. F., v, p. 108 (1877) (Himalayas, Darjeeling).
Staphidia rufigenis. Blanf. & Oates, i, p. 206.

Vernacular names. None recorded.

Description. Similar to the last but with the head lighter and more grey and with a distinct white supercilium from eye to back of ear-coverts, above which there is a rufous band.

Colours of soft parts and **Measurements** as in the last bird.

Distribution. Sikkim to Assam North and East of the Brahmaputra, Abor and Miri Hills. The eastern limits are not yet known, but Harington obtained it in the Kachin Hills.

Nidification. Similar to that of the previous two birds. Round about Margherita we found its nests on banks and sides of cuttings through the jungle, made of soft tow-like material mixed with moss, leaves and rubbish, more or less filling the base of the hole in which it was placed. The eggs were generally three only, rarely four and they differed from those of the Chestnut-headed Staphidia only in being a little more richly marked. One hundred eggs measured on an average 16·6 × 13·3 mm. and the extremes were **18·0** × 13·2 mm., 16·2 × **13·7** mm. and **14·7** × **12·4** mm.

The breeding season lasts from March to June.

Habits. This little Staphidia is found in parties throughout the cold weather, according to Stevens sometimes numbering as many as thirty individuals. It haunts trees and brushwood alike both in forest and in the secondary growth and has the usual restless habits of its tribe. It is not a shy bird. It probably ascends as high as 4,000 feet in summer but is more a low-level bird, keeping for the most part from the foot-hills up to about 2,000 feet.

Genus **SIVA** Hodgson, 1838.

The genus *Siva* contains two species which occur within our limits, these being divided into several well differentiated geographical races. They are distinguishable at a glance from other genera by their peculiar tail-feathers, the ends of which are obliquely truncated. The four central pairs are of equal length and the two outer pairs graduated.

The bill is about half the length of the head, gently curved and notched; the rictal bristles are long and the nostrils are covered by a membrane; the head is crested and they are birds of handsome plumage.

Key to Species and Subspecies.

A. Primaries edged with orange.
- *a*. Central tail-feathers red on only half their length .... *S. strigula strigula*, p. 313.
- *b*. Central tail-feathers red on five-sixths of their length .... *S. s. castaneicauda*, p. 314.

B. Primaries edged with blue.
- *c*. Under plumage vinous-grey.
  - *a'*. Upper plumage light ochraceous; secondaries tipped with white .... *S. cyan. cyanouroptera*, [p. 314.
  - *b'*. Upper plumage fulvous olive-brown; no white tips to secondaries ...... *S. c. wingatei*, p. 315.
- *d*. Under plumage white.
  - *c'*. Forehead blue, indistinctly striped.
    - *a''*. Upper plumage fulvous olive-brown .... *S. c. oatesi*, p. 316.
    - *b''*. Upper plumage dusky olive-brown. *S. c. sordida*, p. 316.

(333) Siva strigula strigula.

THE STRIPE-THROATED SIVA.

Siva strigula Hodgs., Ind. Rev., 1838, p. 89 (Nepal); Blanf. & Oates, i, p. 208.

Vernacular names. *Meghlim* (Lepcha).

Description. Forehead, crown and nape bright orange-brown; a ring of yellowish feathers round the eye; sides of head grey, mottled with whitish and dusky; upper plumage slaty-green; middle pair of tail-feathers chestnut-red on half the inner and one-third the outer webs at the base, the remaining two-thirds black tipped with white; the next pair black with a trace of red at the base and tipped yellow; the other feathers black with increasingly broad yellow tips, the outermost pair being all of this colour: wing-coverts and winglet like the back; primary-coverts black; primaries and outer secondaries black, the outer

Fig. 57.—Head of *S. s. strigula*.

webs edged with orange, changing to yellow near the tips, inner secondaries chiefly slaty-grey on the outer webs and black on the inner and tipped with white; chin orange-yellow; throat pale yellow, with narrow crescentic black cross-bars; a narrow moustachial stripe and a patch on the side of the neck black; remaining lower plumage bright yellow, tinged with olivaceous on the sides of the breast and abdomen.

Colours of soft parts. Iris dark reddish-brown; upper mandible dark brown, lower mandible light greyish-brown, tip white; legs and feet grey, claws light brown.

Measurements. Total length about 165 mm.; wing 64 to 69 mm.; tail about 70 to 72 mm.; tarsus about 25 mm.; culmen 12 to 13 mm.

"**The young** appear to have the crown light golden yellow intermingled with grey, and to have the bars on the throat less developed" (*Oates*).

Distribution. The Himalayas from the Sutlej Valley to Eastern Assam North and South of the Brahmaputra Valley.

Nidification. The Stripe-throated Siva breeds in May and June at heights between 4,000 and 9,000 feet or higher, making a neat cup-shaped nest of moss, roots and bamboo leaves, sometimes with a few other dead leaves and reed-stems and lined with roots.

It is placed either in a high bush or a small sapling in forest, either pine, fir or other kinds. The eggs vary from two to four and are a bright pale blue in colour with a few specks or spots of black, or reddish, or reddish brown. They measure according to Hodgson between 20·0 to 22·8 in length and between 15·2 to 16·5 in breadth but nine eggs in my own collection measure only 19·6 × 14·9 mm.

Habits. This bird, like others of the genus, goes about in small flocks, haunting both the higher trees and scrub- and bush-jungle, though it keeps more to the former than the latter.

(334) Siva strigula castaneicauda.

HUME'S SIVA.

Siva castaneicauda Hume, S. F., v. p. 100 (1877) (Muleyit); Blanf. & Oates, i, p. 209.

Vernacular names. None recorded.

Description. Differs from the last bird in the much greater extent of red on the tail; the sides of the head are blackish and the ring of yellow round the eye brighter and more conspicuous.

Colours of soft parts. Iris deep brown; upper mandible brown, lower fleshy; legs and feet dingy glaucous-blue.

Measurements as in the last. I cannot find that the average size of the bill is any bigger. Oates says that the bill is much larger but gives no details.

Distribution. The whole of Burma, throughout the hills from Tenasserim to the Chin and Kachin Hills and Siam.

It is extremely difficult to define the limits of these two races. Birds from the extreme South and East of Burma are quite different from those of the Western Himalayas to Sikkim, but birds from Assam to W. Central Burma are intermediate, having the sides of the head little darker than in typical *strigula*, yet with nearly as much red on the tail as *castaneicauda*; the Chin Hills birds are a step nearer the latter, whilst those from Yunnan, the Shan States and all Eastern and Southern Burma are practically identical with that form.

Nidification and **Habits** as far as is known like those of the last bird. A single egg taken by Mr. W. A. T. Kellow measures 18·4 × 15·6 mm.

(335) Siva cyanouroptera cyanouroptera.

HODGSON'S BLUE-WINGED SIVA.

Siva cyanouroptera Hodgs., Ind. Rev., 1838, p. 88 (Nepal); Blanf. & Oates, i, p. 209.

Vernacular names. *Megblim adum* (Lepcha).

Description. Forehead, crown, nape and hind neck pale blue, the sides of the crown deeper blue, the forehead and anterior part of the crown streaked with brown; lores, round the eyes and a broad

streak behind the eye white; back, scapulars, wing-coverts, rump and upper tail-coverts bright ochraceous; the median pair of tail-feathers wholly blue with a subterminal black patch and white tip; the next four pairs with the outer webs blue, the inner brown margined with white, with the black patch and white tip; the outermost feather black on the outer, white on the inner web; primary-coverts black; winglet cobalt-blue, tipped white; primaries cobalt-blue on the outer webs; outer secondaries margined with pale blue and tipped white; inner secondaries blackish on the inner and bluish-grey on the outer webs, tipped white; ear-coverts, cheeks, sides of the neck, chin and throat, breast and sides of the body delicate vinous-grey; middle of abdomen pale yellowish buff; vent and under tail-coverts white.

Colours of soft parts. Iris brown; bill horny-grey, brownish about the nostrils and with the base of the lower mandible yellowish; feet fleshy-brown or flesh-colour.

Measurements. Total length about 150 to 155 mm.; wing 62 to 70 mm.; tail 63 to 70 mm.; tarsus about 25 mm.; culmen 12 to 13 mm. Birds from the Himalayas are rather larger than those South of the Brahmaputra, having wings 65 to 70 mm. as against 62 to 64 mm. in the southern birds.

Distribution. Himalayas from Naini-Tal to E. Assam, North and South of the Brahmaputra, Manipur, Lushai, Chittagong Hill tracts and Chin Hills.

Nidification. The Blue-winged Siva builds a nest which is a small, neat edition of that of *Leiothrix lutea*; *i. e.* it is a small cup made of leaves, grasses, moss and roots, lined with very fine roots and fine grasses, usually of a very dark colour. The majority of nests are found low down in bushes only a few feet from the ground but others may be taken higher up in trees. Wherever it is placed, however, it is sure to be well hidden, unlike that of *Leiothrix* which is well exposed to view. The eggs vary from two to four, often two only, and are like those of *Siva strigula*; in shape they are very regular ovals and 24 eggs measure on an average $18{\cdot}4 \times 14{\cdot}1$ mm. The breeding season is May and June.

Habits. This Siva may be found anywhere between 3,000 and 8,000 feet but is most common and breeds freely between 4,000 and 6,000 feet. They consort in flocks and feed both on the higher trees and in amongst the brushwood and seem particularly fond of the tangles of raspberry and blackberry vines so common throughout their haunts. They fly well and fairly quickly.

(336) Siva cyanouroptera wingatei.

THE YUNNAN BLUE-WINGED SIVA.

Siva wingatei Ogilvie-Grant, Bull. B. O. C., x, p. 38 (1906) (E. Yunnan).

Vernacular names. *Ching-tong-wu-lee* (Kachin).

Description. Differs from Hodgson's Blue-winged Siva in having the upper plumage more olive-brown and in having no white tips to the wing-quills.

Colours of soft parts and **Measurements** as in the last bird, the culmen averaging a little larger.

Distribution. Kachin Hills to Yunnan and the Shan States.

Nidification. Nothing recorded but a nest and egg sent me from the Shan States are exactly like those of the last bird.

Habits those of the genus.

(337) Siva cyanouroptera sordida.

THE DULL SIVA.

Siva sordida Hume, S. F., v, p. 104 (1877) (Muleyit); Blanf. & Oates, i, p. 210.

Vernacular names. None recorded.

Description. Differs from Hodgson's Blue-winged Siva in having the upper parts earthy-brown, the under parts entirely white and no white tips to the wing-quills.

Colours of soft parts. "Lower mandible, legs, feet and claws whitey-brown; upper mandible darker but still pale brown; iris creamy-white" (*Oates*).

Measurements. Wing 62 mm.; tail 68 mm.; culmen 14 mm.

Distribution. Mt. Muleyit in Tenasserim.

Nidification and **Habits.** Nothing recorded.

(338) Siva cyanouroptera oatesi.

OATES'S SIVA.

Siva cyanouroptera oatesi Harington, Bull. B. O. C., xxxiii, p. 62 (1913) (Byingyi Mountain).

Vernacular names. None recorded.

Description. Intermediate between *wingatei* and *sordida*. Above olive-brown tinged with ochre on the rump but the head almost entirely dull blue, showing only faint indications of the stripes which are conspicuous in *wingatei*. Below white.

Distribution. Mt. Byingyi, borders of Shan States.

Nidification and **Habits** unknown.

Genus YUHINA Hodgson, 1836.

The genus *Yuhina* contains four species which are found within the limits of this work, extending from the Western Himalayas to Assam, Burma and China.

In *Yuhina* the bill is about two-thirds the length of the head, greatly curved and sharply pointed; the frontal hairs and rictal

bristles are well developed and the nostrils are covered with a long membrane. The head is fully crested. The tail is rather short and quite square.

Key to Species and Subspecies.

A. Throat streaked with black.
  a. Upper plumage fulvous brown .... *Y. gularis gularis*, p. 317.
  b. Upper plumage olive-brown ...... *Y. g. yangpiensis*, p. 318.
B. Throat not streaked.
  c. Throat brown.
    a'. Ring round the occiput white; shafts to tail-feathers white .. *Y. diademata ampelina*, p. 318.
    b'. Ring round the occiput orange-rufous; shafts to tail-feathers brown .... *Y. occipitalis occipitalis*, p. 319.
  d. Throat white with black spot on chin .... *Y. nigrimentum nigrimentum*, [p. 320.

(339) Yuhina gularis gularis.

THE STRIPE-THROATED YUHINA.

Yuhina gularis Hodgs., As. Res., xix, p. 166 (1836) (Nepal); Blanf. & Oates, i, p. 631.

Vernacular names. *Fugi-pho* (Lepcha).

Description. Forehead and crest rich hair-brown; upper plumage, wing-coverts, inner secondaries and tail fulvous brown, more fulvous on the rump; lores, cheeks and ear-coverts grey; chin and throat pale rufescent steaked with black; breast plain rufescent; remainder of lower plumage dull orange-brown, duller on the sides; primary-coverts and winglet black; wings blackish, the third to sixth primaries edged with pale grey on the terminal portion of the outer webs and all the secondaries except the first edged throughout their entire length with orange-brown.

Colours of soft parts. Iris dark hazel-brown; bill black, the lower mandible horny-brown; legs and feet yellow-buff or orange-buff, claws dusky.

Measurements. Total length about 150 to 155 mm.; wing 68 to 72 mm.; tail about 60 mm.; tarsus 20 mm; culmen about 12 to 13 mm.

Distribution. Nepal to Eastern Assam North of the Brahmaputra.

Nidification. Hodgson describes the nest as a massive globular affair of moss wedged into a fork of a tree or between rocks, and the eggs as buff or café-au-lait, thickly spotted with reddish brown. Nests taken for me by Messrs. W. P. Masson and sent with the birds are cradles of fern and moss roots, lined with finer moss roots and attached to the pendent roots under an overhanging bank. The eggs are pale sea-green, profusely but not boldly,

speckled all over with light red. They measure 17·4 × 12·6 mm. All the nests were taken in May.

Habits. Very little on record but it is found from 3,000 feet upwards and principally between 4,000 and 7,000 feet. A gregarious bird and haunting trees in forest in preference to the lower bushes and smaller cover.

(340) Yuhina gularis yangpiensis.

Sharpe's Yuhina.

Yuhina yangpiensis Sharpe, Bull. B. O. C., xiii, p. 11 (1900) (Yangpi, Yunnan).

Vernacular names. *Chee-chaw-pum-frong*, *Chee-chaw*, *Pum-chee-chaw* (Kachin).

Description. Very similar to the last but is more olive-brown and less fulvous-brown above and the crest is fulvous-brown instead of a rich hair-brown.

Colours of soft parts. Iris brown; upper mandible black, the lower horny; legs and feet orange.

Measurements as in *Y. g. gularis.*

Distribution. Hills South of the Brahmaputra, Chin Hills, Shan States and Yunnan.

Nidification and **Habits** unrecorded.

(341) Yuhina diademata ampelina.

Rippon's Yuhina.

Yuhina ampelina Rippon, Bull. B. O. C., xi, p. 12 (1900) (Warabum, Bhamo Hills).

Vernacular names. *Chee-chaw-pum-frong*, *Chee-chaw*, *Pum-chee-chaw* (Kachin).

Description. Crest, wing-coverts and upper parts dark earth-brown; a line of silky-white feathers from each eye meeting between the occiput and nape; crest with lighter shaft-streaks; bastard wing and primary-coverts dark brown; quills black, the shafts brown, changing to white at the tips and the primaries edged with white at the ends; tail-feathers brown, dusky on the inner webs and at the tips and with white shafts; lores black; eyelid white; sides of face and ear-coverts greyish brown, the latter with pale shaft-stripes; the anterior part of the cheeks darker brown; under parts earthy-brown, darker on chin and throat, greyish on the breast and paler on flanks: centre of abdomen and tail-coverts white. Axillaries and under wing-coverts white with brown patch.

Colours of soft parts. "Iris clear chestnut; bill and feet yellow" (*David*).

Measurements. Total length about 165 mm.; wing about 74 to 77 mm.; tail about 74 mm.; tarsus about 24 mm.; culmen about 16 to 17 mm.

This bird only differs from *Y. d. diademata* in being darker throughout and in having the breast and sides of the head more grey.

Distribution. Yunnan and Kachin Hills.

Nidification. Breeds in the Bhamo Hills in April and May, making a flimsy, almost transparent cup of black roots with a few scraps of bracken, well plastered with cobwebs and lined with fine black roots and fern-rachides. They are invariably placed low down in brambles, bracken or coarse grass and measure outwardly about 4″ by 2½″ deep. The eggs are two in number, very rarely three, and are long ovals in shape, the ground-colour a dull greenish blue with profuse blotches and specks all over of umber-brown. Twenty-two eggs average 20·5×14·9 mm.

Habits. A common bird in the Bhamo Hills, going about in small flocks in higher saplings and trees. Harington says "They are very Tit-like in their habits and notes, continually raising the crest and so revealing the conspicuous white patch at the back of the head." They seem to be found between 4,500 and 7,000 feet.

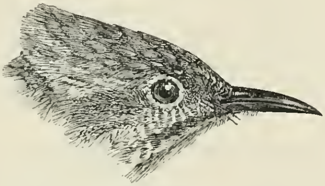


Fig. 58.—Head of *Y. o. occipitalis.*

(342) Yuhina occipitalis occipitalis.

Yuhina occipitalis Hodgs., As. Res., xix, p. 166 (1836) (Nepal); Blanf. & Oates, i, p. 212.

Vernacular names. *Turinging-pho* (Lepcha).

Description. Forehead and crest slaty-grey with whitish shaft-streaks, posterior feathers of crest and nape chestnut; hind neck ashy; upper plumage rufous-brown; the wings and tail brown, the outer webs of the feathers suffused and margined with rufous-brown; a circle of white feathers round the eye; ear-coverts and the region of the eye slaty-grey, streaked whitish; a narrow interrupted black moustachial streak; chin, throat, breast and sides of neck vinous; sides of the abdomen rusty-grey, centre pale chestnut; thighs, vent and under tail-coverts bright chestnut; under wing-coverts and edge of wing white.

Colours of soft parts. Iris red-brown; bill reddish brown; feet orange-buff, claws horny-brown (*Scully*).

Measurements. Total length about 125 mm.; wing 59 to 62 mm.; tail about 50 mm.; tarsus about 18 mm.; culmen 11 to 12 mm.

Distribution. Nepal, Sikkim, Bhutan.

Nidification and Habits. Nothing recorded. It is a bird of high levels, not being found below 6,000 feet and ascending up to 10,000.

(343) Yuhina nigrimentum nigrimentum.

THE BLACK-CHINNED YUHINA.

Polyodon nigrimentum Hodgs., Gray's Zool. Misc., p. 82 (1844) (Nepal).
Yuhina nigrimentum. Blanf. & Oates, i, p. 212.

Vernacular names. *Turringing-pho* (Lepcha).

Description. Forehead and crest black, each feather margined with grey; nape and sides of head grey; lores and chin black; upper plumage and tail dull olive-green; primaries and secondaries brown, narrowly margined with olive-green; throat white; remainder of lower plumage fulvous, tinged with rufous.

Colours of soft parts. Iris hazel; bill dusky above, the lower mandible pale and reddish; feet and legs reddish yellow.

Measurements. Total length about 115 mm.; wing 54 to 57 mm.; tail about 38 to 40 mm.; tarsus about 16 to 17 mm.; culmen about 10 to 11 mm.

Distribution. The Himalayas from Garhwal to Assam North and South of the Brahmaputra, Manipur, Chin Hills and N. Arrakan.

Nidification. This little Yuhina breeds from 4,000 feet upwards throughout its range in the months of May, June and July. It makes a beautiful cradle-shaped nest of moss roots, a tiny scrap or two of moss and a lining of the finest grass stems. It is placed either in amongst the pendent roots of overhanging banks or in amongst the lichen on the lower side of dead branches, in nearly all cases well concealed and difficult to find. They measure only about 80 to 90 mm. in diameter by about 65 mm. in depth. The eggs number three or four and are pale sea-green in colour, lightly marked all over with freckles of reddish, and they measure about $16{\cdot}5 \times 12{\cdot}2$ mm.

Habits. This little Yuhina keeps much to the higher branches of medium-sized and high trees, hunting about for insects in the manner of Titmouses, as often hanging head downwards from the under side as scurrying along the upper, or even clinging, Tree-creeper like, to the bark of the trunk itself. They collect in flocks of some size and keep up a constant "chip, chip" the whole time, occasionally breaking out into a louder, shriller call.

Genus IXULUS Hodgson, 1844.

The genus *Ixulus* resembles *Yuhina* very closely but has the bill shorter, deeper and more curved at the tip; the rictal bristles and hairs over the bill are weaker and less developed.

Key to Species and Subspecies.

A. Nape white .... *I. occipitalis*, p. 321.
B. Nape without any white.
  a. A distinct collar round neck.
    a'. A rusty-yellow collar on hind neck.
      a''. Striæ confined to scapulars and upper back; darker .... *I. flavicollis flavicollis*, [p. 322.
      b''. Striæ over the whole back to rump; paler .... *I. fl. baileyi*, p. 323.
    b'. A bright chestnut collar on hind neck .... *I. fl. harterti*, p. 323.
  b. No collar on hind neck.
    c'. Crown and back brown .... *I. humilis humilis*, [p. 324.
    d'. Crown brown, back greyish .... *I. h. clarkii*, p. 324.

(344) Ixulus occipitalis.

THE CHESTNUT-HEADED IXULUS.

Siva occipitalis Blyth, J. A. S. B., xiii, p. 937 (1844) (Nepal).
Ixulus occipitalis. Blanf. & Oates, i, p. 217.

Vernacular names. *Temgyeng-pho* or *Turring-ng-pho* (Lepcha).

Description. Forehead and crest ferruginous brown; tips of the occipital crest and a bold nuchal patch white; lores and

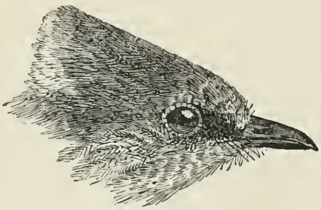


Fig. 59.—Head of *I. occipitalis*.

round the eye dusky; ear-coverts white streaked with rufous; the rest of the sides of head and neck ferruginous brown; back, rump and closed surface of wing dull olive-green, the shafts of the feathers of the upper back and scapulars whitish and the outer webs of the earlier primaries hoary-grey; upper tail-coverts and tail fulvous-brown; chin and throat white; breast pinkish brown, streaked with brown; abdomen and flanks olivaceous, the middle of the former paler; under tail-coverts ferruginous.

Colours of soft parts. Iris brown or red-brown; bill black; legs pale yellowish, fleshy-brown or "dull olivaceous" (*Stevens*).

Measurements. Total length about 130 mm.; wing 64 to 68 mm.; tail about 50 to 52 mm.; tarsus about 20 mm.; culmen about 10 mm.

Distribution. Garhwal, Nepal, Sikkim and Bhutan to the extreme east of Assam, Manipur and the Chittagong Hill tracts.

Nidification. This Ixulus breeds between 4,000 and 7,000 feet in May and June, the nest varying very greatly in character, shape and position. Normally it is domed and placed either on or close to the ground, but sometimes it is semi-domed or merely deep cup-shaped and may be built in a branch of a tree or shrub, in amongst the lichen and moss hanging from a trunk or bough, or it may even be placed in a niche in a rock. The material used is always chiefly moss but this may be mixed to a lesser or greater extent with roots and chips of leaves or bracken, the lining being of roots alone. The eggs number three or four and are in every respect just like those of our English Swallow but the markings are more numerous as well as bolder and larger. Sixty eggs average 19·3 × 14·2 mm. and the extremes are **21·3** × 14·0 mm., 20·1 × **15·0** mm. and **17·3** × **14·0** mm.

Habits. These are just like those of *Yuhina*. They fly well, and their note is a rather sweet, soft chatter. They are very arboreal and may sometimes be seen on the highest trees. They keep almost exclusively to evergreen forest.

(345) Ixulus flavicollis flavicollis.

THE YELLOW-HEADED IXULUS.

Yuhina flavicollis Hodgs., As. Res., xix, p. 167 (1836) (Nepal).
Ixulus flavicollis. Blanf. & Oates, i, p. 218.

Vernacular names. *Srip-chong-pho* (Lepcha).

Description. Forehead and crest rich brown; hinder part of crown, nape and sides of the head mouse-grey, the lower part of the ear-coverts bronze-grey; lores and moustachial streak black; a white ring round eye; a broad rusty-yellow collar round the hind neck; upper plumage olive-brown, the shafts of the feathers of the back pale; upper tail-coverts tinged with fulvous; tail and wings like the back but less olive, the primaries narrowly edged with white; chin and cheeks white; throat white with a few narrow ochraceous streaks and with dark shafts; middle of breast and abdomen pale fulvous; vent and under tail-coverts deep fulvous; flanks and sides of breast ochraceous, streaked with white; under wing-coverts white.

Colours of soft parts. Iris reddish brown or hazel; bill dark horny, the lower mandible paler and rather fleshy; legs and feet fleshy-brown or yellowish brown.

Measurements. Length about 130 mm.; wing 62 to 67 mm.; tail about 50 mm.; tarsus about 20 mm.; culmen about 10 to 11 mm.

Distribution. Himalayas, Sutlej to Bhutan.

Nidification. Similar to that of the preceding bird but, whereas the Chestnut-headed Ixulus generally places its nest on or almost on the ground, this bird seems to prefer to build it amongst the moss growing on the branches and twigs. The eggs cannot be distinguished from those of the last and 28 average 19·81×14·2 mm.

Habits. Those of the genus. This Ixulus is found between 4,000 and 8,000 feet and keeps almost entirely to the greenest and most humid forests though it frequents the more open parts of these.

(346) Ixulus flavicollis baileyi.

The Mishmi Ixulus.

Ixulus flavicollis baileyi Stuart Baker, Bull. B. O. C., xxxv, p. 17 (1914) (Mishmi Hills).

Vernacular names. None recorded.

Description. General plumage paler than in *I. f. flavicollis* and the white shaft-lines extending over the whole of the upper parts; the ear-coverts have none of the bronze tint showing in that bird.

Colours of soft parts. "Iris red-brown; bill horny; tarsus dull yellow" (*Stevens*).

Measurements as in the preceding bird.

Distribution. Mishmi Hills.

Nidification and **Habits.** Not recorded. It is apparently this form which Stevens found in the foot-hills of N. Lakhimpur and the Abor Miri Hills. The birds from the N. Chin Hills are, perhaps, also nearest this form.

(347) Ixulus flavicollis harterti.

The Chestnut-naped Ixulus.

Ixulus flavicollis harterti Harington, Bull. B. O. C., xxxiii, p. 62 (1913) (Sinlum, Bhamo Hills).

Vernacular names. *Chee-chaw* (Kachin).

Description. Similar to *I. f. flavicollis* but differs in having the crest a darker and richer brown; the collar a deeper and brighter chestnut and the back a darker olive-brown.

Colours of soft parts and **Measurements** as in *I. f. flavicollis.*

Distribution. The Bhamo (Kachin) Hills and Trans-Salween Shan States, Burma. Birds from S. Assam, Manipur and S. Chin Hills are also of this form though not so dark as more Eastern specimens.

Nidification. This bird may commonly be found breeding throughout S. Assam and also in the Bhamo Hills. Neither nest nor eggs can be distinguished from those of the Himalayan forms. Forty-eight eggs average 19·3×14·2 mm.

Habits. Those of the species. Stevens found that this bird fed on berries as well as insects.

(348) Ixulus humilis humilis.

DAVISON'S IXULUS.

Ixulus humilis Hume, S. F., v, p. 106 (1877) (Muleyit); Blanf. & Oates, i, p. 218.

Vernacular names. None recorded.

Description. Whole upper plumage, visible portions of wings and tail and sides of head plain brown; lores and moustachial streaks darker brown; sides of neck and whole lower plumage white, the chin, throat and breast with very narrow brown shaft-streaks, broadening on the flanks, thighs and under tail-coverts; under wing-coverts white.

Colours of soft parts. Iris red-brown; bill, upper mandible black, under one pale brown; legs and feet fleshy-brown.

Measurements. Length about 130 mm.; wing about 60 to 62 mm.; tail about 43 to 45 mm.; tarsus about 20 mm.; culmen 10 to 11 mm.

Distribution. Tenasserim only.

Nidification and Habits. Nothing recorded. Frequents the higher portion of Muleyit Mountain.

(349) Ixulus humilis clarkii.

OATES'S IXULUS.

Ixulus clarkii Oates, Bull. B. O. C., iii, p. 41 (1894) (Byingyi); Blanf. & Oates, iv, p. 481.

Vernacular names. None recorded.

Description. Differs from the last in having a much greyer back, well defined from the brown head, the shafts on the back are also paler, showing up as better-defined streaks.

Measurements. "Wing 66 mm.; tail 50 mm.; tarsus 19 mm.; bill from gape 12·7 mm."

Distribution. At present only known from Byingyi, a mountain on the borders of the Shan States.

Nidification unknown.

Habits. Oates records that he "found this bird very common on Byingyi, in small parties, searching the blossoms of small trees for insects." Byingyi is at about 6,200 feet elevation.

Genus ERPORNIS Hodgson, 1844.

The genus *Erpornis* is represented by one species only, which extends from the Himalayas to China and the Malay islands, where it is represented by geographical races or subspecies. In *Erpornis*

the bill is slender and about as long as the head, with the tip well bent down; the nostrils are covered by a few long hairs and the rictal bristles are strong; the head is crested, the wing rather long and pointed and the tail perfectly square. The plumage is green.

(350) Erpornis xantholeuca xantholeuca.

The White-bellied Herpornis.

Erpornis xantholeuca Hodgs., J. A. S. B., xiii, p. 380 (1844) (Nepal).
Herpornis xantholeuca. Blanf. & Oates, i, p. 219.

Vernacular names. *Dung-pu-pho* (Lepcha).

Description. Whole upper plumage, visible wings and tail clear greenish yellow; lores, cheeks and lower plumage white, slightly tinged with grey; ear-coverts ashy-white; under wing-coverts pale yellow; under tail-coverts bright yellow.

Colours of soft parts. Iris brown or red-brown; bill pale fleshy horn-colour, the edges of the commissure, lower bill and gape brighter, paler fleshy; mouth and extreme corner of gape yellow; legs and feet flesh-colour or yellowish flesh-colour.

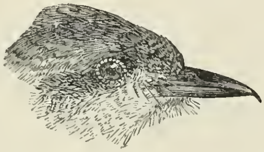


Fig. 60.—Head of *E. x. xantholeuca.*

Measurements. Length about 120 mm.; wing 63 to 70 mm.; tail about 45 mm.; tarsus about 16 mm.; culmen 10 to 10·5 mm.

Distribution. The Himalayas from Nepal to Assam, both North and South of the Brahmaputra, Manipur and practically the whole of Burma, Siam and N. Malay Peninsula.

Nidification. The White-bellied Herpornis breeds from practically the level of the plains up to some 3,000 feet but more often below 1,500 feet than over. The nest is a cradle of fine roots, mixed with fibres and fine grass stems and lined with the latter. It may be pendent in a horizontal fork or just hanging from a few twigs either of bamboo or some shrub within a few feet of the ground. Hopwood took its nest in Burma in March but in India it breeds in April and May. Its nest is built either in evergreen forest, mixed bamboo and scrub or in bushes in thin cover. The eggs are two or three in number, the ground-colour white or, rarely, creamy-white and the markings consist of sparse blotches of pale reddish, generally confined to the larger end. The texture is faintly glossy and is stout for the size of the eggs; in shape they are rather long ovals and twenty eggs average 16·7 × 12·6 mm., the extremes being **18·8** × **14·0** and **15·2** × **12·0** mm. In each of

these cases the same individual egg gives the extremes in breadth and length.

Habits very like those of *Ixulus* but *Erpornis* seems to keep much to the tops of very high trees. In the non-breeding season it is not usually found in heavy forest but prefers the thinner outskirts of big forests or the smaller forests which generally fill the ravines and pockets in the grass-lands. It was common in the thin deciduous forest in the North of the N. Cachar Hills, where we found it in small parties diligently hunting the smaller branches and twigs for insects. It is a very silent bird and I have not heard its note.

Subfamily LIOTRICHINÆ.

This subfamily contains a number of genera the placing of many of which is a matter of no little difficulty. Since Oates wrote the first volume of the first edition of the Avifauna we have learnt a good deal which has enabled us to eliminate several genera which are obviously non-Timaliine, but further examination of material anatomically may assist us to place yet others in more suitable positions than the present.

Of the 16 genera included by Oates in his *Liotrichinæ*, the following five have been removed to other families. *Irena* is now placed in Oberholser's new Family *Irenidæ*; *Melanochlora* has been transferred to the Titmouses, *Paridæ*; *Leptopœcile* and *Cephalopyrus* have been included in the *Regulidæ*, whilst *Psaraglossa* is a true Starling and will be found in the *Sturnidæ*.

Of the remaining genera there are still some whose position is especially doubtful. *Cutia* and *Pteruthius* have, it has been suggested, many affinities with the *Campephagidæ* and Harington claims that their nidification also proves this; to me, however, the nidification seems to point strongly to a position somewhere near *Yuhina*, *Ixulus* etc. and, for the present, the reasons for their retention in the subfamily seem greater than for their rejection.

The position of *Myzornis* is problematical, and careful examination of pterylosis and anatomy and a correct knowledge of its breeding habits are urgently required. *Chloropsis* is in the same group as *Aethorhynchus* and *Ægithina* and seems to be in many ways intermediate between the *Timaliidæ* and *Pycnonotidæ*, the fact that the sexes differ seeming to determine their position in the former rather than the latter. *Hypocolius* is a very curious bird with a very short first primary and may eventually have to be placed in a family by itself.

The subfamily as now restricted differs from the previous subfamilies of the *Timaliidæ* and from the *Pycnonotidæ* in having the sexes differing in coloration; the young are very like the adults but rather duller; the wing and tail are generally not greatly different in length; the first primary, with the exception of *Hypocolius*, is about half the length of the second; the wing is fairly rounded but longer and more pointed than in the preceding

subfamilies; the tarsus is strong, though more fitted for arboreal than terrestrial habits and the bill is usually short.

Key to Genera.

A. First primary about half the length of the second.
  a. Tail considerably shorter than wing.
    a′. Tail-feathers curved outwards .... LIOTHRIX, p. 327.
    b′. Tail-feathers straight.
      a″. Upper tail-coverts falling short of tip of tail by less than the length of hind toe. CUTIA, p. 329.
      b″. Upper tail-coverts falling short of tip of tail by about the length of tarsus.
        a‴. Tarsus longer than middle toe and claw.
          a^4. Bill stout, strongly notched and hooked at tip.
            a^5. Bill about half the length of head; culmen well curved............ PTERUTHIUS, [p. 330.
            b^5. Bill as long as head; culmen nearly straight .... AETHORHYNCHUS, [p. 337.
          b^4. Bill slender and very little deflected at tip.
            c^5. Plumage principally black and greenish yellow .... ÆGITHINA, p. 339.
            d^5. Plumage green and red.......... MYZORNIS, p. 344.
        b‴. Tarsus shorter than middle toe and claw CHLOROPSIS, [p. 346.
  b. Tail and wing about equal in length.
    c′. Outer tail-feather falling short of tip of tail by a distance equal to length of tarsus .. HILAROCICHLA. [p. 336.
    d′. Outer tail-feather falling short of tip of tail by a distance less than length of tarsus.
      c″. Closed bill deeper than wide at nostril .. MESIA, p. 353.
      d″. Closed bill equal in width and depth at nostril .... MINLA, p. 355.
B. First primary about a sixth the length of the second .... HYPOCOLIUS, [p. 356.

Genus **LIOTHRIX** Swains., 1831.

The genus *Liothrix* contains one remarkable species of hill-bird, which is characterized by a slightly forked tail, the feathers of which are gently curved outwards; the bill is about half the length of the head, stout and with the culmen curved. It resembles very closely the bill of *Mesia*, figured below (p. 354). The tail is quite square at the tip and the upper tail-coverts are long. The species extends from Simla in the Western Himalayas, East into China and South into S. Burma and Siam. It is divisible into several geographical races.

Liothrix lutea.

Key to Subspecies.

A. Smaller; wing, male 65 to 71 mm., female 61 to 65 mm......................... *L. lutea callipyga*, p. 328.
B. Larger; wing, male 72 to 76, female 66 mm. *L. l. yunnanensis*, p. 329.

(351) Liothrix lutea callipyga.

THE INDIAN RED-BILLED LIOTHRIX.

Bahila callipyga Hodgs., Ind. Rev., 1838, p. 88 (Nepal).
Liothrix lutea. Blanf. & Oates, i, p. 221.

Vernacular names. *Nanachura* (Dehra Doon); *Rapchil-pho* (Lepcha); *Daotisha-buku-gajao* (Cachari).

Description.—Adult male. The whole upper plumage and sides of the neck olive-green, the forehead and crown tinged with yellow; middle pair of tail-feathers and the outer webs of the others black, inner webs brown and all tipped white; the primaries edged with yellow and later on with crimson; outer secondaries black, with a patch of orange-yellow at the bases of the outer webs; inner secondaries olive-green tinged with rufous; lores orange-yellow; a ring round the eye yellow; ear-coverts silvery-grey; a narrow moustachial streak dusky green; chin and throat bright yellow, turning to deep orange-yellow on the lower throat; centre of breast and abdomen, the vent and under tail-coverts yellow; sides of breast and abdomen slaty-green.

Female differs from the male in having the crimson on the wing replaced by yellow.

Colours of soft parts. Iris brown or red-brown; bill brilliant orange-red throughout in summer, blackish at the base in winter; legs and feet yellowish brown to dark brown.

Measurements. Total length about 145 to 155 mm.; wing: males 65 to 71 mm., females 61 to 65 mm.; tail 55 to 60 mm.; tarsus about 25 mm.; culmen 10 to 11 mm.

Distribution. The Himalayas from Simla to Eastern Assam, the Khasia Hills, Chin Hills and N. Arrakan.

Nidification. The Red-billed Liothrix breeds throughout its range between 3,000 and 8,000 feet in almost any kind of forest, pine, evergreen, deciduous, or in secondary growth and heavy scrub-jungle, but it certainly prefers forest of pine or fir with undergrowth. Its nest is a neat cup of grass, bamboo and other leaves and moss; the latter material often forming nearly the whole nest, whilst the lining is of fine roots and tendrils. It is generally placed in a fork, upright or horizontal, or in amongst a few twigs of a bush or bramble, at some height between 2 and 10 feet. It is seldom well hidden and is often very conspicuous. 200 eggs average 21·9 × 16·1 mm. and the extremes are 23·2 × 17·0, 23·0 × 17·1, 18·9 × 15·2 and 21·4 × 15·0 mm. In colour they vary from almost pure white to pale blue and the markings consist of sparse spots and blotches of reddish brown with others, underlying these, of neutral tint, generally confined to the larger end and often forming an ill-defined zone. The shape is a blunt, broad oval and the texture is close, hard and glossy, often very highly so.

The breeding season lasts from early April to September but most eggs are laid in May and June.

Habits. This bird is found in the cold weather in small parties of half-a-dozen or so wandering about in the lower growth in forests and scrub but not frequenting the higher trees unless frightened into them. They are cheerful little birds, constantly chatting to one another and, in the Khasia Hills, very bold and confiding, though they are said elsewhere to be shy birds. In the breeding season, however, when they break up into pairs they are much shyer and quieter, though the male may often be seen perched on some bramble, quivering his wings and fluffing out his feathers as he trills his pretty little love-song to his mate near by.

(352) Liothrix lutea yunnanensis.

THE YUNNAN RED-BILLED LIOTHRIX.

Liothrix lutea yunnanensis Rothschild, Nov. Zool., xxviii, p. 36 (1921) (Shweli-Salwin Divide).

Vernacular names. None recorded.

Description. "Differs from *L. l. calipygus* in its larger size, more sharply defined yellowish head and in the fact that of eight specimens six have the red or yellow on the 7th, 8th and 9th primaries broadly interrupted, while the whole eight have this colour on the first secondary interrupted or entirely absent, while in the other two species it is never broken or it is entirely black."

Colours of soft parts. "Iris brown; bill orange-red summer, scarlet with black base winter; legs and feet dark brown."

Measurements. "Wing ♂ 72 to 76 mm.; ♀ 66 mm." (*Rothschild*).

Distribution. Yunnan west to the Kachin Hills. Birds obtained in Bhamo by Harington seem referable to this race.

Nidification and Habits. Similar to those of the last bird.

Genus CUTIA Hodgson, 1836.

The genus *Cutia* contains but one species, a very handsome bird remarkable for the great development of the upper tail-coverts, which reach nearly to the tip of the tail. In *Cutia* the bill is rather slender, curved, notched and pointed and slightly longer than half the length of the head; the rictal bristles are very short; the nostrils longitudinal and covered by a membrane and the frontal bristles are short and firm. The tail is about two-thirds the length of the wing and slightly rounded.

(353) Cutia nipalensis nipalensis.

THE NEPAL CUTIA.

Cutia nipalensis Hodgs., J. A. S. B., v, p. 774 (1836) (Nepal); Blanf. & Oates, i, p. 222.

Vernacular names. *Khatya* (Nepal); *Rapnoon* or *Rapnun-pho* (Lepcha).

Description.—**Male.** The lores, sides of forehead and a broad band passing through the eyes and ear-coverts round the nape black; the whole crown deep slaty; back, scapulars, rump and upper tail-coverts chestnut; wing-coverts black; quills black, all but the first two with a patch of slaty near the base, increasing in extent inwards and the 3rd to the 6th or 7th primary with a narrow edging of the same about the middle of the outer web; most of the later quills minutely tipped with white; tail black; lower plumage white, the sides of the body boldly barred with black; vent and under tail-coverts pale buff.

Colours of soft parts. Iris brown; bill black, pale leaden-blue at gape and base of lower mandible; legs and feet rich wax-yellow; claws pale yellowish-horny.

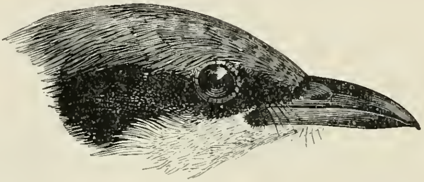


Fig. 61.—Head of *C. n. nipalensis.*

Measurements. Length about 180 mm.; wing 90 to 96 mm.; tail about 55 mm.; tarsus about 30 mm.; culmen about 17 mm.

Female. The crown paler and the band surrounding it chocolate-brown instead of black; the back and scapulars reddish brown with large oval black spots; otherwise as in the male.

Distribution. The Himalayas from Nepal to Eastern Assam, North and South of the Brahmaputra, Manipur and Karenni.

Nidification. Unknown.

Habits. Found in flocks, above 6,000 feet, in summer, in forest where it frequents the higher trees only. In winter it certainly wanders down a good deal lower, for I saw it on two or three occasions in the north-west of N. Cachar at about 3,000 feet during December and January. They were then frequenting the higher branches of oak-trees and the huge cotton-trees which were scattered about amongst them. They feed both on insects and berries and seeds.

Genus **PTERUTHIUS** Swains., 1831.

The genus *Pteruthius* contains four species and many subspecies of a very curious group of birds rather Shrike-like in general outward appearance but quite unlike any Shrikes in habits and nidification and also in the sexes being dissimilar. Harington (Journal B. N. H. S. xxiii, p. 655, 1915) suggests that the proper position of this and the preceding genus is somewhere near the *Campe-*

phagidæ but, though they may in some respects approach this family, they seem to me to be nearer the *Timaliidæ*, in which I retain them.

The bill is about one-half the length of the head, strongly hooked at the tip and with the margins sinuate; the rictal bristles are weak. The nostrils are the same as in *Liothrix lutea* as are also the wing and tail but the upper tail-coverts only reach to the middle of the tail. The feathers of the crown are ample but do not form a crest, the tarsus is strong and quite Timaliine.

Key to Species and Subspecies.

A. Inner secondaries chestnut.	
a. Crown black	*P. erythropterus*, ♂, p. 331.
b. Crown bluish grey	*P. erythropterus*, ♀, p. 332.
	[p. 333.
B. Inner secondaries golden yellow	*P. æralatus æralatus*, ♂,
C. Inner secondaries tipped with chestnut	*P. æ. æralatus*, ♀, p. 333.
D. Inner secondaries bluish grey or green .	
c. Crown greenish yellow.	
a'. Nape bluish-ashy.	[p. 333.
a''. Tips of wing-coverts white	*P. melanotis melanotis*, ♂,
b''. Tips of wing-coverts salmon-pink	*P. m. melanotis*, ♀, p. 334.
b'. Nape greenish yellow.	
c''. Tips of wing-coverts white	*P. m. intermedius*, ♂, p. 335.
d''. Tips of wing-coverts salmon-pink	*P. m. intermedius*, ♀, p. 335.
d. Crown blackish.	[*chloris*, ♂, p. 335.
c'. No white ring round eye	*P. xanthochloris xantho-*
d'. A white ring round eye	*P. x. pallida*, ♂.
e. Crown dark grey.	
e'. No white ring round eye	*P. x. xanthochloris*, ♀, p. 336.
f'. A white ring round eye	*P. x. pallida*, ♀.
f. Crown pale ash-grey	*P. x. occidentalis*, ♂, p. 336.
g. Crown pale greenish grey	*P. x. occidentalis*, ♀, p. 336.

P. x. pallida (David, Yunnan) is very likely to be found in the N. Shan States, so is included in the key.

(354) Pteruthius erythropterus.

The Red-winged Shrike-Babbler.

Lanius erythropterus Vigors, P. Z. S., p. 22 (1831) (Himalaya Mt.) (*Murree, Punjab*).
Pteruthius erythropterus. Blanf. & Oates, i, p. 224.

Vernacular names. *Dao-kranji* (Cachari).

Description.—Adult male. Forehead to nape, lores, under the eye and ear-coverts black; a broad white supercilium; upper plumage bluish grey, some of the upper tail-coverts tipped with black; tail and wing-coverts black; primaries and outer secondaries dark brown, edged with glossy black and tipped with white; inner secondaries chestnut, lower plumage very pale greyish white, the sides of the throat, centre of the abdomen, vent and under wing- and tail-coverts pure white; lower parts of the flanks pale rusty.

Colours of soft parts. Iris pale greenish or greyish white to deep lavender-, green-, or blue-grey of almost every conceivable tint and sometimes (*Godwin-Austen*) amber; bill pale plumbeous, the base of mandible and most of the culmen black; legs and feet pale fleshy-white to pale fleshy-brown, claws horny-brown and soles more yellowish.

Measurements. Total length about 190 mm.; wing 80 to 85 mm.; tail about 60 to 65 mm.; tarsus about 28 to 29 mm.; culmen about 17 mm.

Female and Young. The upper part of the head bluish grey instead of black and supercilium very indistinct; upper plumage olive-grey; smaller wing-coverts black edged with yellowish; greater coverts black with yellow outer webs; primary-coverts and winglet black; the earlier primaries edged with hoary-grey, the others with yellow; inner secondaries chestnut; the central tail-feathers green, the others black with broad green margins to the outer webs and tipped with yellow; lower plumage entirely pale buff.

Measurements a little smaller than the male; wing 78 to 81 mm.

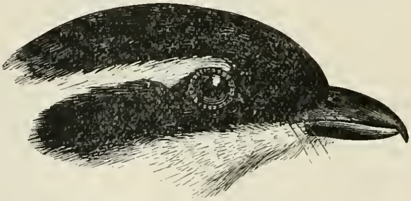


Fig. 62.—Head of *P. erythropterus.*

The young male assumes the adult plumage in the first autumn.

Distribution. The Himalayas from Hazara to E. Assam, Manipur and the Chin Hills.

Nidification. This Shrike-Babbler breeds between 3,500 and 9,000 feet in June. Col. R. H. Rattray describes its nest as one of the most difficult to find, being always built in the smaller twigs very high up in high trees in forest. The nest is a strong, neat cradle of fine roots, built, like an Oriole's, pendent from a small fork. Three eggs taken on the 11th of June were a pale lilac-white with numerous fine specks and spots of deep purple, forming deep rings round the extreme larger end and finely peppered over the rest of the surface. They are broad ovals in shape, of a rather fragile, glossless texture and measure about 21·8 × 16·2 mm. A nest taken by myself on the Khasia Hills in May contained two abnormal, addled eggs. Neither nest nor eggs bear any resemblance to those of the *Laniidæ* or *Campephagidæ*.

Habits. In the Himalayas from West to East this bird seems to be found from 5,000 feet upwards but in the hills South of the Brahmaputra they descend to 3,500 feet and are common, even in summer, at 4,000 feet. They consort either in pairs or in small

parties and keep much to the fringe of forests, the sides of roads and streams and open glades, and when perched on the topmost twig of some tall bush they do look extremely Shrike-like but directly they move the resemblance disappears. They are sedate and rather slow in their actions as they hop about or clamber through the bushes and scrub and their flight is jerky, dipping and rather feeble. They are not shy birds and keep up a continuous grating "chirr" when being watched but they also have some loud musical call-notes. They feed both on insects and berries and seeds.

(355) Pteruthius æralatus æralatus.

TICKELL'S SHRIKE-BABBLER.

Pteruthius æralatus Tickell, J. A. S. B., xxiv, p. 267 (1855) (Tenasserim, 3,500-4,500 ft.); Blanf. & Oates, i, p. 225.

Vernacular names. None recorded.

Description.—Male. Differs from the last in having the inner secondaries golden yellow on the outer webs and edged with black on the inner webs and tipped with black. The lower plumage is also more grey.

Colours of soft parts. "Legs and feet fleshy white; claws pale brown to black; lower mandible and basal edges of upper mandible along commissure pale blue, rest of the bill black; iris varied considerably, slaty grey, pale greenish grey and deep brown" (*Hume & Davison*).

Measurements a little smaller than the last; wing 75 to 81 mm.

The female differs in having the inner secondaries green, tipped with chestnut and the back grey.

Distribution. The Kachin Hills, East of Bhamo, the hills of Central East Burma, Muleyit and probably other ranges in Tenasserim and the North of the Malay Peninsula.

Nidification. Unknown.

Habits. On Muleyit, Davison found this bird in pairs or singly, frequenting the tops of the highest trees, hunting the smaller branches and foliage for insects. Its note he syllabizes as "too weech." He also says that if one of a pair is shot, the other at once commences calling and hunting for its companion. This trait is also seen in the last bird.

Probably all the forms of *æralatus* should be treated as geographical races of *erythropterus*, but in the series available for examination I have seen no intermediate forms.

(356) Pteruthius melanotis melanotis.

THE CHESTNUT-THROATED SHRIKE-BABBLER.

Pteruthius melanotis Hodgs., J. A. S. B., xxiv, p. 267 (1855) (Terai, E. Himalayas); Blanf. & Oates, i, p. 226.

Vernacular names. *Ku-er-pho* (Lepcha).

Description.—Male. Upper plumage greenish yellow; tail, central tail-feathers green, tipped black, next four pairs black tipped white, these white tips increasing in size outwardly until the outermost are wholly white; a white ring round the eye; ear-coverts yellow; a black spot behind the ear-coverts; a broad supercilium bluish white; nape bluish-ashy; lores and lines above and below the eye meeting behind it black; chin, throat and upper breast deep chestnut; remaining lower plumage bright yellow. Wings brown, the feathers edged with bluish grey and the inner secondaries wholly of this colour and all the quills but a few of the first primaries tipped with white; lesser wing-coverts black edged with grey; greater coverts black, broadly tipped with white; primary-coverts and winglet black.

Colours of soft parts. Iris hazel or light brown; bill plumbeous; legs and feet fleshy-white.

Measurements. Length about 120 mm.; wing 60 to 63 mm.; tail about 45 to 46 mm.; tarsus about 20 mm.; culmen about 7 to 8 mm.

Female. Differs from the male in having salmon-pink tips to the wing instead of white, the chestnut of the throat not reaching the breast, and in having the lores and lines through the eyes brown and not black.

The young are like the female but the upper plumage is olive-brown and the lower plumage is yellowish white; the nape is concolorous with the back and there are no black lines through the eyes.

Distribution. The Himalayas from Nepal to E. Assam both North and South of the Brahmaputra; Manipur.

Nidification. This beautiful little Babbler breeds from 4,000 feet upwards in the hills of S. Assam and according to Hodgson at 6,000 or 7,000 feet in Nepal. It makes a lovely little cradle-like nest of fine roots, a little moss and lichen, occasionally an odd twig or leaf or two, scantily lined with rhizomorph from a fungus or very fine moss roots. It may be placed either in a horizontal fork or pendent between two or more small twigs and at any height from the ground from 5 to 15 feet, in bush or small sapling. They breed from the middle of April to the middle of June, laying four or five, or even six eggs. These are of two types—a delicate pinky-lilac with fine specks and tiny blotches of dark purple, mostly confined to the larger end, or a pale pink with similar marks of pale reddish brown with others underlying of pale lilac and neutral tint. The shape is a regular or rather broad oval and the texture soft and fine, glossless and rather fragile. Thirty-four eggs average 17·9×13·5 mm. and the extremes are **19·1**×**14·4** mm. and **16·8**×13·0 mm. and 17·4×**12·6** mm.

Habits. This little bird seems to be invariably found in pairs only, frequenting both lofty trees and the higher bushes and brushwood. It is essentially a forest bird but at the same time keeps to the more open parts and to the vicinity of jungle-tracks,

streams and natural glades. It has the Tit-like habits of many of the smaller Babblers but is very deliberate in its movements both on wing or on foot. Its call is a pleasant double note—"too-weet, too-weet," not often uttered unless the birds are separated.

(357) Pteruthius melanotis intermedius.

HUME'S SHRIKE-BABBLER.

Allotrius intermedius Hume, S. F., v, p. 112 (1877) (Tenasserim).
Pteruthius intermedius. Blanf. & Oates, i, p. 227.

Vernacular names. None recorded.

Description.—Male. Differs from the last in having the forehead deep chestnut, followed by a yellow band; the grey nape and black neck-patches are absent; the outermost tail-feathers have a streak of black near the tips of the outer webs; the 1st and 2nd primaries are entirely black, the next four black on the base and white on the rest of the outer webs.

Colours of soft parts and **Measurements** as in the last.

The female has the forehead rufous and the lower plumage pale yellow. The wings are edged with green except the earlier primaries which are edged with pale yellow.

Distribution. The eastern hills of Burma from Bhamo to Tenasserim.

Nidification and **Habits.** Nothing recorded.

(358) Pteruthius xanthochloris xanthochloris.

THE GREEN SHRIKE-BABBLER.

Pteruthius xanthochloris Hodgs., J. A. S. B., xv, p. 448 (1847) (Nepal); Blanf. & Oates, i, p. 227.

Vernacular names. None recorded.

Description.—Male. The forehead, lores, sides of the crown and round the eye dark grey; crown and nape blackish with traces of grey; ear-coverts and upper parts green; lesser wing-coverts brown edged with green; greater coverts the same tipped with yellowish; primary-coverts black; wings dark brown edged with green exteriorly; tail brown suffused with green on the outer webs, tipped with white and the outer web of the outermost feather whitish; chin, throat and breast pale ashy, suffused in places with yellow; remaining lower plumage, under wing-coverts and axillaries bright yellow.

Colours of soft parts. Iris grey, dark grey or grey-brown; bill black, the lower mandible and commissure pale blue-grey; legs and feet fleshy or fleshy-grey.

Measurements. Length about 125 mm.; wing 62 to 65 mm.; tail about 48 to 50 mm.; tarsus about 20 mm.; culmen 8 mm.

The female has the crown the same grey as the forehead, and there are no traces of black or blackish on the face.

Distribution. Nepal, Sikkim and Hills North of the Brahmaputra.

Nidification. Nests and eggs sent me by Mr. D. Macdonald and Mr. W. P. Masson with the parent birds are exactly like those of the next form, nor can the eggs be distinguished from those of that bird. They measure about 19·3 × 14·8 mm.

Habits. This is a quiet, rather retiring bird, but cannot be called shy as it does not mind being watched. It keeps to the tops of the higher trees in deep forest and is so slow and unobtrusive in its habits that it does not attract attention and its low, rather pleasant, call-notes cannot be heard at any distance. It is not gregarious, being generally found in pairs, and feeds on small insects and small berries and seeds.

(359) Pteruthius xanthochloris occidentalis.

THE SIMLA GREEN SHRIKE-BABBLER.

Pteruthius xanthochloris occidentalis Harington, Bull. B. O. C., xxxiii, p. 82 (1913) (Dehra Dun).

Vernacular names. None recorded.

Description.—Male. Differs from the last in having the crown and nape ash-grey instead of blackish and the whole plumage is somewhat paler and less vivid. The female differs in having the head greenish with a wash of grey.

Colours of soft parts and Measurements as in the last.

Distribution. N.W. Himalayas from the Sutlej Valley to Garhwal and, possibly, W. Nepal.

Nidification. Nests taken by Osmaston and Rattray are described as deep cradles of root-fibres and lichen, bound together with cobwebs, lined with the finest black roots and rhizomorph of a fungus and attached to small forks in the outer branches of spruce or deodar. They apparently breed from April to July at elevations between 5,000 and 9,000 feet and lay two to four eggs. These are miniatures of those of *P. erythropterus* and ten eggs average about 19·4 × 14·6 mm.

Habits. Practically nothing recorded. It keeps much to heavy tree-forest in pairs or solitary, frequenting the higher branches, where it attracts no attention either by voice or its quiet movements.

Genus HILAROCICHLA Oates, 1889.

The genus *Hilarocichla* was created by Oates for a species very close to *Pteruthius* but differing in its much longer tail. This is equal to the wing in length and is greatly graduated, the outermost feather being about one-third less than the central ones. In other respects *Hilarocichla* and *Pteruthius* are alike.

(360) Hilarocichla rufiventer.

THE RUFOUS-BELLIED SHRIKE-BABBLER.

Pteruthius rufiventer Blyth, J. A. S. B., xi, p. 18 (1843) (Darjiling).
Hilarocichla rufiventris. Blanf. & Oates, i, p. 243.

Vernacular names. None recorded.

Description.—Male. The forehead, crown, nape, hind neck and sides of the head black; upper plumage chestnut; wings black, the secondaries tipped chestnut, a few of the primaries margined with grey below the emarginations; chin, throat and upper breast ashy, divided by a white line from the black of the head; a patch of golden yellow on each side of the breast; remainder of lower plumage soft vinous-brown, paler on the abdomen and lower tail-coverts; under wing-coverts pale vinous; edge of wing white.

Colours of soft parts. In the dry state the bill is black, bluish on the lower mandible; legs fleshy-brown.

Measurements. Length about 200 mm.; wing 85 to 88 mm.; tail about 85 mm.; tarsus about 30 mm.; culmen about 15 to 16 mm.

Female. Forehead grey tipped with black; crown and nape black; sides of head grey, with a black patch at the end of the ear-coverts; back, scapulars and upper part of rump bright green, irregularly barred with black: lower rump and upper tail-coverts chestnut; central tail-feathers green with black shafts, black sub-terminal bar and white tips; the others black with a portion of the outer webs green and all tipped with chestnut; smaller wing-coverts black, broadly tipped with green; greater wing-coverts black on the inner webs and green on the outer webs; winglet and primary-coverts black; quills black, the earlier primaries edged with hoary-grey, all the other quills with green, the innermost having the whole of the outer webs green; chin, throat and breast grey; lower plumage dark vinous-brown, with a yellowish patch on either side of the breast.

Distribution. Nepal, Sikkim and the Naga Hills but its limits are not yet known.

Nidification and Habits. Beyond the fact that it is a bird of high elevations, nothing is known about it.

Genus AETHORHYNCHUS Sundevall, 1872.

In this genus the bill is very strong, nearly as long as the head, very nearly straight and with the tip strongly notched and hooked; the nostrils are long ovals and the rictal bristles are weak. The tail is almost square at the end. The 1st primary is about half the length of the 2nd and the 3rd and 4th are longest and not equal. The legs are not so strong as is usual in the *Timaliidæ*.

The position of this genus, of *Ægithina* which is very closely allied to it, and of *Chloropsis* is very doubtful. In all three the sexes are dissimilar and in the first two the summer and winter plumages of the males are different. They have frequently been placed in a family with the Bulbuls and one or two others but they appear to me to be even less closely connected with them than with the truly Timaliine birds. Probably they should be placed in a family by themselves leading from the *Timaliidæ* to the *Pycnonotidæ* but for the present I leave them as they are. Specimens in spirit are wanted for examination.

(361) Aethorhynchus lafresnayi.

The Great Iora.

Iora lafresnayi Hartl., Rev. Zool., 1844, p. 401 (Malacca).
Aethorhynchus lafresnayi. Blanf. & Oates, i, p. 228.

Vernacular names. None recorded.

Description.—Breeding male. Upper plumage dull green, the feathers fringed with black: wings, tail and upper tail-coverts deep black, the primaries and outer secondaries very narrowly

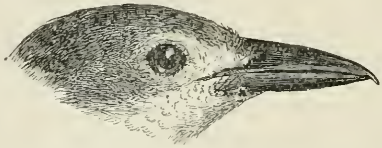


Fig. 63.—Head of *Ae. lafresnayi.*

edged with greenish on the outer and more broadly with white on the inner webs; lores, cheeks, a ring round the eye and the whole lower plumage bright yellow.

Non-breeding male and female. Upper plumage without the black fringes; the tail dull greenish yellow; primaries and secondaries brown instead of black.

Colours of soft parts. Iris brown or hazel-brown; bill plumbeous, leaden blue or bluish slate, the culmen darker; legs and feet clear slate or plumbeous blue, the claws horny-brown.

Measurements. Length about 165 mm.; wing 67 to 72 mm.; tail about 55 to 57 mm.; tarsus about 20 mm.; culmen about 17 mm.

Distribution. From South Arrakan down West Burma to Tenasserim and the Malay Peninsula, Siam and ? Annam.

Nidification. Two nests taken by Mr. W. A. T. Kellow near Perak are small, rather deep cups of the softest grasses, lined with the same and well bound round and about with spiders' webs, often mixed with their egg-bags. Both were placed in high bushes in evergreen-jungle. They were taken on 4th January and

27th March and contained one and three eggs respectively. In ground-colour these are a greyish white and they are marked longitudinally with grey streaks and here and there with one more reddish. They measure between 17·3 × 14·1 mm. and 20·2 × 15·3 mm.; the former is presumably abnormally small.

Habits. The Great Iora is more of a forest than a garden bird, at the same time in Mergui and other places it is known to enter compounds and orchards. It is said to keep to the higher trees in preference to scrub- and bush-jungle, to have a fine whistling call and to be entirely insectivorous in its diet.

Genus **ÆGITHINA** Vieill., 1816.

The birds of this genus are very closely allied to the last but have a smaller bill. Like the last they have two moults in the year, the male assuming a breeding plumage at the early moult.

Key to Species.

A. Tail black or green throughout.	
a. Upper plumage either greenish yellow, or black, or a mixture of both	*Æ. tiphia*, p. 339.
b. Upper plumage entirely dark green	*Æ. viridissima*, p. 343.
B. Tail tipped with white	*Æ. nigrolutea*, p. 344.

Ægithina tiphia.

This species is found over a very wide range of country from Ceylon, almost throughout India, Burma, Siam, the Malay Peninsula, Java and Borneo and, as might be expected, shows a very great variation in plumage, especially in the breeding season. Birds from the South of India and Ceylon are very like those from the extreme South of Burma and from the Malay Peninsula, as is so often the case with species which extend from one end of the Indo-Burmese horseshoe to the other. Gradations from North to South are, however, very gradual and it is difficult to define where the meeting lines of the various races are to be found and on this account it is only possible to divide the species into very few well-defined geographical races.

We have, however, the following subspecies which seem worthy of attention:—

(1) A very black-backed bird from Ceylon and South Travancore, possibly reappearing in South Malaya;

(2) A bird with a much greener and less black back, which occurs over the whole South-East, East and North-East India, Burma, etc.; and

(3) A third form in which the male has *no* black in the non-breeding season and in which the female is duller and paler than those from elsewhere.

Key to Subspecies.

A. Upper parts greenish, more or less marked with black from crown to rump, the bases of the feathers showing through as greenish	*Æ. tiphia tiphia*, ♂ breeding, [p. 340.
B. Whole upper plumage from crown to rump black, bases showing through as bright yellow	*Æ. t. ~~zeylonica~~* multicolor, ♂ breeding, [p. 342.
C. Upper parts mostly black but with a great deal of yellow showing through, especially on nape	*Æ. t. humei*, ♂ breeding, p. 342.
D. Above rather dark yellowish green, tail black	*Æ. t. tiphia*, ♂ non-breeding, [p. 341.
E. Above a still darker shade, tail black	*Æ. t. zeylonica*, ♂ non-breeding, [p. 342.
F. Above paler, more yellowish, tail ~~green~~ black	*Æ. t. humei*, ♂ non-breeding, [p. 343.
G. Above greenish yellow	*Æ. t. tiphia*, ♀, p. 341. also 1st winter ♂
H. Above darker greenish	*Æ. t. ~~zeylonica~~* multicolor, ♀, p. 342.
I. Above very pale dull greenish yellow	*Æ. t. humei*, ♀, p. 342.

Æ. t. scapularis is the Javan form which is probably the same as those from Sumatra, Borneo and South Malaya. Birds from Siam, Cochin China and further east are very richly coloured and orange below, whilst those from Annam are again somewhat different, the females being very grey on the breast and flanks.

Fig. 64.—Head of *Æ. t. tiphia*.

(362) Ægithina tiphia tiphia.

THE COMMON IORA.

Motacilla tiphia Linn., S. N., p. 186 (1758) (Bengal).
Ægithina tiphia. Blanf. & Oates, i, p. 230.

Vernacular names. *Shoubiga* or *Shoubigi* (Hind.); *Patsu-jitta* (Tel.); *Pachapora* (Tam.); *Cha-tuk*, *Taphika*, *Fatickja-tonfik* (Beng.); *Barsat-Sorai* (Assamese); *Daotisha gurrmo gadeba* (Cachari); *Inga-ruina* (Kacha Naga); *Vohjong pong* (Mikir); *Shwe-pi-so* (Burmese).

Description.—Male breeding. Lores, forehead, crown, back, upper tail-coverts and tail black, the bases of the feathers yellow-green and showing through on the back; rump green; wings black with two wide bars of white, formed by the median coverts and tips of greater; edges of inner secondaries white; outer

secondaries and primaries very narrowly edged with white; ear-coverts, sides of head and whole lower plumage yellow, washed with green on the flanks, vent and under tail-coverts, brightest on throat and upper breast.

Colours of soft parts. Iris yellowish white to bright pale yellow; bill slaty-blue, the culmen blackish; legs and feet clear slaty-blue to dull plumbeous.

Measurements. Length about 140 mm.; wing 59 to 68 mm.; tail about 50 mm.; tarsus about 18 to 19 mm.; culmen about 12 to 13 mm.

Female. Above green or yellowish green, the tail rather darker and faintly edged with yellowish white, the black of the wings in the male replaced by brown; entire under plumage yellow, tinged with greyish green on flanks.

Male in winter plumage is similar to the female but has the tail black and the undersides rather brighter.

The description of the male given above is quite exceptional, more green and much less black being the rule and many breeding males have practically no black on the upper parts other than the wings and tail.

Distribution. All India, except S. Travancore, East of a line, roughly speaking, drawn from the head of the Gulf of Cambay through Abu to Simla and excluding that portion of South, Central India occupied by *Æ. t. humei.* It extends through Assam, Burma, certainly to the north of the Malay Peninsula, east to Western Siam, Annam (*Robinson & Kloss*) and the Kachin Hills. There is a specimen in the British Museum collection received from Khorasan in Persia.

Nidification. The Common Iora breeds from April to July, making a very neat, cup-shaped nest of fine, soft grasses lined with the same and well matted outside with cobwebs and spiders' egg-bags. It measures about 2½″ (62·3 mm.) in diameter by about 2″ (50 mm.) deep, the walls being very thin, only some 3 or 4 mm. thick. It may be placed in either a horizontal or vertical fork of any bush or small tree at any height from 2 to 30 feet from the ground. The eggs number two to four, most often three, and are very unusual in coloration; they are of two types—one with a pale creamy or greyish-white ground-colour, with a few irregular longitudinal marks of grey and underlying ones of neutral tint. The second type has the ground-colour a beautiful pink and the markings are reddish. Eggs from Siam are much more speckly in their character. 60 eggs average 17·6 × 13·9 mm., the greatest and least length and breadth being **19·0** × 14·3; 18·1 × **15·0**; **16·2** × 14·0 and 18·2 × **13·2** mm.

Habits. The Iora is a bird of the plains and lower hills, seldom being found much over 2,000 feet, though stragglers may rarely wander up as high as 8,000 feet (Simla). It is a familiar little bird, haunting gardens, orchards and the outskirts of villages as

well as the fringe of forests and scrub-jungle. In the breeding season it performs wonderful acrobatic feats, darting up into the air and then with all its feathers, especially those of the rump, puffed out, it comes spinning down in a spiral to the perch it has left. Arrived there it spreads and flirts its tail like a little Peacock, drooping its wings and uttering all the time a protracted, sibilant whistle or chirrup. It has a great variety of notes, the most striking of which is a prolonged "we-e-e-e-tu," a long, drawn-out wail with the last note dropping suddenly. This seems never to be uttered except in the rains, and when constantly repeated to the accompaniment of the splash of rain and the sough of the wind, is one of the saddest little bird-notes imaginable. It is generally found in pairs and is not gregarious, though, where it is common, three or four may be seen together on the same tree, hunting actively for the insects which form its food.

multicolor

(363) Ægithina tiphia zeylonica.

The Ceylon Iora.

Motacilla zeylonica Gmel., S. N., i, p. 964 (1788) (Ceylon).

Vernacular names. *Patra jitta* (Tel.).

Description.—Male breeding. Above from crown to rump much blacker than in the last bird and where the bases of the feathers show through these are much narrower, especially on the extreme upper back.

The non-breeding male and female are a much darker green above than *Æ. t. tiphia*.

The other differences which have often been dwelt upon, such as the absence of white on the wing, the depth of yellow below, etc. are of little help in distinguishing one race from another, but the dark tint at once suffices to separate Ceylon and S. Travancore birds from all but those of the Malay Peninsula, which undoubtedly come extraordinarily close to them.

Colours of soft parts and **Measurements** as in the other races.

Distribution. Ceylon and S. Travancore only.

Nidification and **Habits** as in the last.

(364) Ægithina tiphia humei, subsp. nov.

The Central Indian Iora.

Vernacular names. None recorded.

Description.—Adult male breeding. Varies little from the last; there may be rather more yellow showing on the nape as a rule and the lower parts are perhaps brighter.

Female is much paler and duller than either of the other races, the yellow-green of the back having a faint grey tinge whilst the

underparts are also paler and duller. The pale edges to the tail-feathers are more conspicuous.

Non-breeding male. Paler and duller than the other races and with the tail green, not blackish.

Distribution. South Central India. There are specimens in the British Museum, chiefly from the Hume collection, from the following places:—Saugor, Jhansi, Jubbulpore, Raipur, Seoni, Mhow, etc., roughly embracing S. and W. Rajputana, the Central Provinces and the United Provinces south of the Ganges.

Nidification and Habits in no way different from those of the other races. I have named this bird after Allan O. Hume, who pointed out the differences at considerable length in 'Stray Feathers,' ~~vi~~, p. 437.

The type is ♀, No. 86.9.1.143, British Museum Coll., dated 12.5.70, Raipur.

(365) Ægithina viridissima.

The Green Iora.

Iora viridissima Bonap., Consp. Av., i, p. 379 (1850) (Sumatra).
Ægithina viridissima. Blanf. & Oates, i, p. 231.

Vernacular names. None recorded.

Description.—Adult male. The whole plumage dark green, becoming yellow on the abdomen and vent; lores blackish; feathers above and below the eye bright yellow; under tail-coverts pure yellow; under wing-coverts white; tail glossy black; wing-coverts black with white tips forming two wing-bars; quills black, narrowly edged with green and the inner secondaries broadly edged on both webs with white.

Colours of soft parts. Iris brown or reddish brown; bill slaty or plumbeous blue, the culmen and tip black; legs and feet plumbeous blue.

Measurements. Total length about 130 mm.; wing 60 to 65 mm.; tail about 45 to 46 mm.; tarsus about 17 to 18 mm.; culmen about 12 to 13 mm.

Female and young male. Above paler than the adult male and the tail edged with yellow; the wing-coverts are brown, instead of black, with yellowish wing-bars; the quills are dark brown and the whole lower plumage is pale greenish yellow.

Distribution. Peninsular Burma and Siam, down the Malay Peninsula to Borneo and Sumatra.

Nidification. Nest and eggs sent me by Mr. W. A. T. Kellow from the foot-hills beyond Perak are indistinguishable from those of *Ægithina tiphia.* The nests were taken in thin scrub-jungle and were placed in vertical forks of bushes. The eggs measure 17·8 × 13·9 mm. They were taken in May.

Habits. Similar to those of the Common Iora, though this is apparently more of a jungle, and less of a village, bird than that is.

(366) Ægithina nigrolutea.

MARSHALL'S IORA.

Iora nigrolutea Marshall, S. F., iv, p. 410 (1876) (Meerut).
Ægithina nigrolutea. Blanf. & Oates, i, p. 232.

Vernacular names. The same as for *Ægithina t. tiphia.*

Description.—Male breeding. Upper back bright golden yellow, delicately fringed or stippled with black; remaining upper parts black, the yellow showing through more or less on the lower back; tail broadly tipped with white; scapulars, lesser coverts and greater coverts black, the latter tipped with white and the median coverts wholly white; quills black, narrowly margined with greenish, the outer secondaries tipped with white and the inner tipped and margined with white; sides of head and neck and whole lower plumage bright yellow; under wing-coverts white.

Male in non-breeding plumage loses all or nearly all the black on the upper parts which become dull greenish yellow.

Colours of soft parts. Iris dark brown; bill horny plumbeous, the culmen darker; legs and feet light plumbeous.

Measurements. Total length about 130 to 140 mm.; wing 60 to 66 mm.; tail about 44 to 50 mm.; tarsus about 17 to 18 mm.; culmen 10 to 11 mm.

Female. Whole upper plumage greenish yellow; the upper tail-coverts black, fringed with green; tail ashy-green, the central pair of rectrices nearly all white and the remainder broadly edged with white, yellowish-white or greyish-white; rest of plumage like that of the male but the black of the wings replaced by blackish brown.

Distribution. Takes the place of *Æ. t. tiphia* and *Æ. t. humei* to the north-west of India. It is found in Cutch, Rajputana where it overlaps the range of *Æ. t. humei* for some distance, Southern and South-Western Punjab, North-West Provinces; occasional in the north of the Central Provinces and north of the Ganges as far as Behar and the Santal Parganas, much overlapping the range of *Æ. t. tiphia.* Some authors consider both this bird and the last to be merely geographical races of *Ægithina tiphia*, but their actual breeding ranges overlap so constantly without a corresponding intergrading of form that it seems imperative to give them the status of full species.

Nidification. Exactly like that of *Ægithina tiphia.* Twenty-four eggs taken by Barnes, Kemp and General Betham measure $17{\cdot}1 \times 13{\cdot}1$ mm.

Habits. Those of all the rest of the genus.

Genus **MYZORNIS** Hodgson, 1843.

The genus *Myzornis* contains one species of brilliant green plumage, an inhabitant of the higher portions of the Himalayas.

In *Myzornis* the bill is slender and nearly as long as the head, distinctly notched, with the culmen gently curved; the nostrils are longitudinal and covered by a membrane; the rictal bristles are weak: the head is not crested, but the feathers of the crown are somewhat lengthened; the wing is rounded; the tail about two-thirds the length of the wing and slightly graduated and the tarsus is long and slender.

The sexes are dissimilar.

(367) Myzornis pyrrhoura.

The Fire-tailed Myzornis.

Myzornis pyrrhoura Hodgs., J. A. S. B., xii, p. 984 (1843) (Nepal); Blanf. & Oates, i, p. 233.

Vernacular names. *Lho-sagvit-pho* (Lepcha).

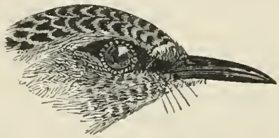


Fig. 65.—Head of *M. pyrrhoura*.

Description.—Male. Lores and a patch behind the eye black; rest of the head and body bright green, the feathers of the forehead with black centres and a streak above and below the eye still brighter green; throat and upper breast suffused with red and the lower breast and abdomen tinged with the same; vent and under tail-coverts chestnut-red; wing-coverts and inner secondaries bright green; winglet tipped with white; primary-coverts black, edged with green and tipped with yellow; primaries brown, the first eight tipped with white, the outer webs of all deep black, more or less edged with red; outer secondaries with the outer webs red and tipped with pinkish; inner secondaries black with some green on the inner webs; tail-feathers red on the outer webs, green on the inner, broadly tipped with dusky.

Colours of soft parts. Iris red or red-brown; bill dusky-brown; legs fleshy.

Measurements. Length about 130 mm.; wing 59 to 63 mm.; tail about 70 to 75 mm.; tarsus about 22 to 23 mm.; culmen about 13 mm.

Female has the primary-coverts green, tipped with white; the terminal spots on the secondaries pure white and the red on under parts, tail and wings duller.

Distribution. Nepal and Sikkim from 6,000 feet upwards.

Nidification. No authentic record.

Habits. A bird of high-level forests, from 6,000 to 10,000 feet or more.

Genus CHLOROPSIS Jard. & Selby, 1826.

I have already referred to this genus when dealing with *Ægithina*.

It contains a large number of species of bright plumage, principally green, which extend from Ceylon, through India, Burma, Siam etc. to Western China and through the Malay Peninsula to the islands.

It is represented in India by six species, some of which have numerous geographical races and are spread over a very wide area.

In this genus the bill is slender and curved and about as long as the head, the tip is notched and the nostrils are oval; the rictal bristles are weak; the frontal feathers are advanced up to the nostrils; the wings are rounded, but are less so and longer than in the more typically Timaliine birds; the tarsi are very short, resembling in this respect the *Pycnonotidæ*.

Key to Species and Subspecies.

A. Forehead rich yellow-orange.	
a. Chin and throat bright blue.	
a'. A yellow collar round blue throat	*C. aurifrons aurifrons*, [p. 346.
b'. Yellow collar absent or obsolete......	*C. a. inornata*, p. 349.
b. Chin and throat black	*C. a. davidsoni*, p. 348.
B. Forehead greenish or yellowish.	
c. Abdomen orange	*C. hardwickii*, p. 349.
d. Abdomen green.	
c'. Outer webs of primaries blue	*C. icterocephala chlorocephala*, p. 350.
d'. Outer webs of primaries green.	
a''. A bright patch of colour on wing-coverts.	
a'''. Moustachial streak a mere short, narrow line	*C. viridis zosterops*, [p. 351.
b'''. Moustachial streak broad and occupying the whole cheek	*C. jerdoni*, p. 352.
b''. No bright patch of colour on wing-coverts	*C. cyanopogon*, p. 353.

(368) Chloropsis aurifrons aurifrons.

THE GOLD-FRONTED CHLOROPSIS.

Phyliornis aurifrons Temm., Pl. Col., 484 (1829) (Cachar).
Chloropsis aurifrons. Blanf. & Oates, i, p. 235.

Vernacular names. *Subz-harewa* (Nepal); *Hurriba* (Beng.); *Skalem-pho* (Lepcha).

Description. Forehead and fore-crown golden-orange; chin, cheeks and extreme upper throat brilliant purplish blue; remainder of throat, ear-coverts, round the eye, lores and a narrow line up to the nostrils black; an indistinct supercilium and a broad band surrounding the black of chin and throat golden-yellow, a patch

on the wings including most of the lesser coverts, bright pale blue; edge of wing rather darker blue; concealed portions of wing-quills dark brown; lower aspect of tail plumbeous; remainder of plumage bright grass-green, lighter below and sometimes inclined to an emerald tint.

Colours of soft parts. Iris light to dark brown; bill black, gape and base of lower mandible horny; mouth bluish; legs clear pale to dark plumbeous, the younger the bird the brighter and clearer the colour.

Measurements. Total length about 190 mm.; wing 94 to 98 mm.; tail about 70 to 75 mm.; tarsus about 18 mm.; culmen about 17 to 18 mm.

Female has the gold forehead less developed and the crown duller, the gold collar is obsolete; the blue of the throat is sometimes mixed with black.

Measurements. A smaller bird than the male; wing 90 to 94 mm.

Distribution. The Himalayas from Garhwal and Simla to Eastern Assam; the hilly country of North and North-East India from Chota Nagpur, Rajmahal, Santal Parganas etc.; the whole of Burma to South Tenasserim where it meets *C. a. inornata*; Shan States, North and Central Siam.

Nidification. The nest is a rather shallow cup, made of very fine twigs, moss roots, the tendrils of climbing plants, outwardly bound together and also interwoven with scraps of moss, grass and a tow-like material which seems to be the inner bark of a tree. The lining, if any, is of finest grass stems or moss roots. The nests are generally placed in horizontal forks at the extremity of a small outer branch near the top of a high tree in forest. As the nest is a small one, roughly about 3·7″ (93 mm.) by under 2″ (50 mm.) deep, it is very hard to find.

They breed from the middle of May to the end of July or even into August at all heights from 3,000 to 6,000 feet and probably much lower, as a nest of a Chloropsis, probably of this species, was taken by natives in the foot-hills of Cachar at a few hundred feet elevation only and in Margherita, Assam, at about 700 feet this bird was quite common throughout the summer.

The normal clutch of eggs is two, three only rarely and in appearance they are very like long dull-coloured eggs of the Niltavas. The ground is cream or reddish cream and they are covered, usually profusely, with faint pale reddish-brown markings, equally numerous over the whole surface. They are long, often pointed, ovals in shape and the texture is glossless and fairly fine. Ten eggs average 23·5 × 15·5 mm.

Habits. The Golden-fronted Chloropsis is found in small parties, four to a dozen or so, throughout the non-breeding season, frequenting open but well-wooded country, and keeping much to the tops of the highest trees, especially the Cotton-tree (*Bombax malabarica*) when in flower. At other times it may be found in

the lower growths and it roosts for preference in dense secondary scrub or even in long sun- or elephant-grass. It indulges in the quaintest of attitudes when feeding and is a very active and restless bird. At one moment it will hover like a Sun-bird in front of a flower, at another it clambers along the lower surface of a thin branch and sometimes it will swing itself round and round in somersaults, a trick it carries with it into captivity. It is a most charming cage-bird, very easily tamed and a sweet songster. Its note, most often used in the cold weather when feeding in company, is a low "cheep," like that of a chicken calling for its mother, but it has an immense number of notes and is an excellent mimic. It feeds on insects, seeds and fruit and I have seen it feeding on bananas, oranges and peaches which had burst over-ripe on the trees. They are extremely quarrelsome birds and will allow no others to feed near them.

(369) Chloropsis aurifrons davidsoni.*

The Malabar Chloropsis.

Chloropsis aurifrons davidsoni, Stuart Baker, Bull. B. O. C , xli, p. 8 (1920) (Malabar).
Chloropsis malabarica. Blanf. & Oates, i, p. 235.

Vernacular names. *Chota Harrial* (Hind.).

Fig. 66.—Head of *C. a. davidsoni.*

Description.—Adult male. Differs from *C. a. aurifrons* in having the chin and throat black instead of blue without the surrounding gold collar. The moustachial streak remains blue.

Colours of soft parts and **Measurements** as in the last.

The female has but little signs of the golden forehead or blue moustachial streak and has the chin and throat pale green.

The young bird, as in the last, is all green.

Distribution. West coast of India, Khandala to Ceylon.

Nidification. A nest with eggs sent me from Ratnapura, Ceylon, is exactly like that of the Gold-fronted Chloropsis and was placed in an outer small branch of a tree about 20 feet from

* *Turdus malabaricus* Gmel., S. N., p. 837, is preoccupied by the same author, p. 816, and cannot therefore be used.

the ground. The two eggs are also just like that of the last bird and measure 21·0 × 15·0 and 21·0 × 15·1 mm. They were taken on the 25th January.

Habits. This bird is found at all heights up to 6,000 feet, more often between 2,000 and 4,000 feet. It inhabits forests or open country as long as it is well wooded and appears to keep almost entirely to trees in its search for food, which consists of both insects and fruit.

(370) Chloropsis aurifrons inornata.

THE SIAM CHLOROPSIS.

Chloropsis aurifrons inornatus Kloss, Ibis, 1918, p. 198 (Lat Bau Kao, Siam).

Vernacular names. None recorded.

Description. Differs from *C. a. aurifrons* in having less orange on the forehead and practically no golden collar.

Colours of soft parts. "Iris dark; bill black; feet plumbeous" (*Kloss*).

Measurements. Wing 85 to 88 mm.; tail 60 to 65 mm.

Distribution. West and South Siam, straggling into the extreme East of Peninsular Burma; Annam and Cochin China.

Nidification. Not recorded.

Habits. Apparently differ in no way from those of the other races.

(371) Chloropsis hardwickii hardwickii.

THE ORANGE-BELLIED CHLOROPSIS.

Chloropsis hardwickii Jard. & Selby, Ill. Orn. Add., p. 1 (1829) (Nepal); Blanf. & Oates, i, p. 236.

Vernacular names. *Dao-gurrum-ho-gatang* (Cachari).

Description. Whole upper plumage and inner secondaries bright green; forehead, above the eye and down the neck, strongly tinged with yellow; lores, ear-coverts and a patch behind them black; chin, throat and upper breast velvety black, glossed with purplish blue; moustachial streak bright cobalt; tail above purplish blue, the inner webs dusky-black; lesser wing-coverts verdigris-blue; other coverts black edged with purple; flanks green; remainder of lower plumage bright, deep orange.

Colours of soft parts. Iris bright red-brown to black-brown; bill black; legs plumbeous blue, dull and dark in old birds, bright and clear in the young.

Measurements. Total length about 188 mm.; wing 93 to 99 mm.; tail about 75 to 78 mm.; tarsus about 18 mm.; culmen 17 mm.

Female. A moustachial streak pale cobalt; primaries and outer secondaries brown, the former narrowly, the latter broadly, edged with green; centre of breast and abdomen and under tail-coverts orange, paler than in the male.

The young are wholly green and take over the year to acquire their full plumage.

Distribution. The Himalayas from Simla and Mussoorie to Eastern Assam, South through Manipur, Lushai Hills to Tenasserim, East to the Shan States and North and Western Siam. It also occurs in the Malay Peninsula.

Nidification. The Orange-bellied Chloropsis breeds throughout its range during the rains, occasionally in May, making a nest quite indistinguishable from that of *aurifrons* but which is sometimes placed lower, rarely within 8 or 10 feet of the ground. It breeds more exclusively in forest and less in the more open parts than does the previous species. The eggs cannot be separated from those of the *aurifrons* group. Twenty eggs average 22·8 × 15·9 mm.

Habits. The Orange-bellied Chloropsis is found from the foot-hills and the plains adjoining up to about 6,000 feet; it is much more a forest bird than most members of the genus, but haunts the thinner parts near rivers, glades and openings rather than the deeper parts. It may be seen either in pairs or small parties, and is very active and quick on its legs and flies well. It is a really beautiful songster and has a wonderful range of notes in addition to great powers of mimicry. It is a very favourite cage-bird in Assam and is easily taught tricks and becomes very tame. In a wild state it lives principally on insects, though it also eats some seeds and most fruit; in captivity, however, it is almost exclusively frugivorous.

(372) Chloropsis icterocephala chlorocephala.

The Burmese Chloropsis.

Phyllornis chlorocephalus Wald., A. M. N. H., (4) vii, p. 241 (1871) (Tounghoo).
Chloropsis chlorocephala. Blanf. & Oates, i, p. 237.

Vernacular names. *Dao-bulip gurrimo* (Cachari).

Description.—Male. Lores, feathers under and in front of the eye, cheeks, chin and throat black; forehead and broad band from eye to eye passing round and encircling the throat pale yellowish green; front of the crown above the forehead and a broad streak passing over the eyes and ear-coverts pale green; a very short moustachial streak cobalt; crown of the head and nape golden green; back, rump, upper tail-coverts and scapulars, deep green; tail blue; primaries and their coverts black, edged with blue; outer secondaries black on the inner, blue on the outer webs edged with green; inner secondaries and greater

coverts green tinged with blue: lesser coverts glistening cobalt-blue; median and greater coverts green tinged with blue at the base; under plumage bright green tinged with blue on the breast.

Colours of soft parts. Iris brown; bill black; legs plumbeous.

Measurements. Length about 180 mm.; wing 80 to 85 mm.; tail about 67 to 70 mm.; tarsus about 18 mm.; culmen 16 to 17 mm.

Female. The black on the head is replaced by bluish green, there is no yellow band round the black; the moustachial streak is pale and the general tint duller.

Distribution. Hills South of the Brahmaputra to the extreme East of Assam, Manipur, Burma, the whole of Siam, East to Cochin China and Yunnan, and South to Tenasserim.

Nidification. Similar to that of the other species of this genus. I found it breeding in N. Cachar and the Khasia Hills in April and May and again, perhaps a second brood, in July and August. They kept for breeding purposes to dense, humid forests between 2,000 and 6,000 feet. Sixteen eggs average 22·3 × 15·5 mm., the extremes being **23·2** × 15·4 mm.; 22·3 × **16·0** mm. and **21·0** × **14·4** mm.

Habits. In the non-breeding season the Burmese Chloropsis is found from the plains up to at least 6,000 feet, but during the breeding time seems to leave the plains and keep to the higher hills. It has the usual habits of the genus and a very sweet song, though not as fine as that of the Orange-bellied Chloropsis.

(373) Chloropsis viridis zosterops.

The Malachite-shouldered Chloropsis.

Chloropsis zosterops Vigors, App. Mem. Life Raffl., p. 674 (1830) (Tenasserim); Blanf. & Oates, i, p. 238.

Vernacular names. None recorded.

Description.—Male. The whole upper plumage, wing-coverts, inner secondaries and tail bright green, the inner webs of all but the central tail-feathers edged with brown; a patch on the lesser wing-coverts malachite-green; other wing-quills dark brown, broadly edged with bright green; feathers above the nostrils, lores and a narrow line over the eye, cheeks, chin and throat black; ear-coverts and next the black throat a paler green than the back; a short blue moustachial streak; lower plumage bright green, a little paler than above.

Colours of soft parts. Iris light brown, dark brown to crimson; bill black; legs and feet pale to dark plumbeous.

Measurements. Length about 220 to 230 mm.; wing 87 to 90 mm.; tail about 75 mm.; tarsus about 19 mm.; culmen about 20 mm.

The female and young have no black on the head; the chin, throat and a ring round the eye are bright yellow and the moustachial streak is pale and ill-defined.

Distribution. Tenasserim, South of Ye, near Moulmein, Malay Peninsula to Borneo and Sumatra, South-West Siam.

Nidification unknown.

Habits. Davison records the habits of this bird as being the same as those of *chlorocephala* but that it is even more exclusively a forest bird. This bird is only a race of *Chloropsis viridis* of Java, from which it differs in the tint of the shoulder-patch.

(374) Chloropsis jerdoni.

Jerdon's Chloropsis.

Phyllornis jerdoni Blyth, J. A. S. B., xiii, p. 392 (1844) (Madras).
Chloropsis jerdoni. Blanf. & Oates, i, p. 238.

Vernacular names. *Harrewa* (Hind.); *Wanna bojanum* (Tel.).

Description.—Male. A moustachial streak bright purplish blue; lores, chin, throat and a line from the lores over the moustachial streak black; forehead and a band surrounding the black greenish yellow; lesser wing-coverts very bright malachite-green; remainder of the plumage with the visible portions of wings and tail green.

Colours of soft parts. Iris brown or red-brown; bill black; legs and feet lavender or pale slaty.

Measurements. Length about 190 to 200 mm.; wing 86 to 89 mm.; tail about 75 mm.; tarsus 17 to 18 mm.; culmen about 17 mm.

Female. The black of the male is replaced by bluish green and the cheek-stripe is bright greenish blue.

The young are like the female but have no moustachial streak.

Distribution. The Peninsula of India, from Sitapur, Fyzabad and Barti on the North; Baroda and Panch Mahals on the West; the Rajmahal Hills and Midnapore on the East down to and into Ceylon.

Nidification. This Chloropsis makes a nest like the nest of the genus, a small cradle of soft, tow-like material interwoven with small pieces of grass and other stems, fine roots and lichen and lined, if at all, with a sparse lining of grass. This it places in a fork of an outer branch of some tree, generally between 15 and 25 feet from the ground. They breed from April to August, laying two or, very rarely, three eggs. These are quite unlike those of the other known eggs of the members of the genus. The ground-colour is a white to a very pale creamy or pink sparingly marked with spots, specks, small blotches and short hair-lines of blackish, purplish or reddish brown, chiefly disposed about the larger end. The surface is glossless but smooth, the texture fragile and the

shape a rather long obtuse oval. Thirty eggs average 21·1 × 15·1 mm.; the extremes are **23·1 × 18·4** mm. and **19·3 × 14·3** mm.

Habits. Jerdon's Chloropsis is found either in pairs or small parties frequenting trees in fairly open country, gardens, orchards, small spinneys and light forest. It apparently is not found in heavy forest such as is common in sub-Himalayan plains and in parts of Southern India also. It is as active in its habits as the rest of its relations, a sweet songster with an endless répertoire of notes, both of its own and copied from other birds. Many of its notes are very like those of the common King-Crow, though softer and sweeter. It is a favourite cage-bird, feeding, both in captivity and when wild, on fruit, seeds and insects. It is very fond of small grasshoppers.

(375) Chloropsis cyanopogon.

THE BLUE-WHISKERED CHLOROPSIS.

Phyllornis cyanopogon Temm., Pl. Col., 512, fig. i (1829) (Sumatra).
Chloropsis cyanopogon. Blanf. & Oates, i, p. 239.

Vernacular names. None recorded.

Description.—Male. The upper plumage, tail, wing-coverts and sides of the neck bright green, the forehead tinged with yellow and inner webs of tail-feathers brown; wing-quills dark brown edged with green; lores, cheeks, chin and throat black; a line over the lores and eye brighter green than elsewhere; a short moustachial streak blue; a line round the black throat greenish yellow; lower plumage light green.

Colours of soft parts. Iris dark brown; bill black; legs and feet dark plumbeous.

Measurements. Length about 180 mm.; wing 81 to 85 mm.; tail about 30 to 33 mm.; tarsus about 18 mm.; culmen about 15 mm.

Female. Chin and throat green, the moustachial streak pale dull blue and feathers round eye yellowish.

Distribution. The South of Tenasserim down the Malay Peninsula to Sumatra and Borneo. South-West Siam.

Nidification. Unknown.

Habits. According to Davison the habits of this bird closely resemble those of the Burmese Chloropsis.

Genus MESIA Hodgson, 1838.

The genus *Mesia* is very closely allied to *Liothrix*, differing principally in the shape of the tail, which is rounded and a little graduated. The bill is exactly like that of *Liothrix* but the nostril is covered by a peculiarly shaped membrane.

(376) Mesia argentauris argentauris.

THE SILVER-EARED MESIA.

Mesia argentauris Hodgs., Ind. Rev., 1838, p. 88 (Nepal); Blanf. & Oates, i, p. 244.

Vernacular names. *Chi-ro-chi-rit* (Kachin); *Dang-rap-chil-pho* (Lepcha).

Description.—Male. Forehead golden-yellow; crown, nape, lores, cheeks black, produced as a stripe under the ear-coverts; ear-coverts silvery-white; upper back and sides of neck fulvous yellow; lower back, scapulars, inner secondaries and wing-coverts slaty, some of the outermost of the latter edged with green;

Fig. 67.—Head of *M. a. argentauris.*

rump slaty-green; upper tail-coverts crimson: tail blackish brown, the three outer pairs of feathers edged with yellowish; wings brown, the first three primaries edged with yellow, the other quills with crimson near their bases and yellow elsewhere; chin and throat deep orange-yellow; lower plumage olive-yellow, brighter on the breast and abdomen, the former of which is obsoletely streaked darker; under tail-coverts crimson.

Colours of soft parts. Iris red-brown to brown; bill yellow-ochre, tinged with greenish or brown at the base; legs and feet fleshy-yellow.

Measurements. Length about 180 mm.; wing 74 to 78 mm.; tail about 45 mm.; tarsus about 25 mm.; culmen 12 to 13 mm.

The female and young have the upper and lower tail-coverts orange-buff and the latter also has the crown yellowish.

Distribution. The Himalayas from Garhwal to East Assam North and South of the Brahmaputra, Manipur, Lushai, Chin, Kachin Hills, mountains of Central and S. Burma, Shan States, Siam. East of this it is replaced by a nearly allied race, *M. a. cunhacei* (Kloss).

Nidification. Every word written on the nidification of *Liothrix lutea* would do equally well for this bird also and it is quite impossible to tell nests and eggs of the one from the other. This bird, however, breeds a little lower down than does the Liothrix. Whilst the latter breeds principally between 4,500 and 7,000 feet this bird breeds for the most part between 3,000 and 5,000 feet and whereas the former prefers pine-forests, the present one likes

low scrub and evergreen forest. Two hundred eggs average 20·9 × 16·1 mm. and the extremes are **23·4** × 16·0; 22·8 × **17·0** and **19·4** × 16·0; 21·0 × **15·0** mm.

Habits. The Mesias gather together in the cold weather in flocks of considerable size, sometimes as many as twenty, or even thirty, forming a flock. They are not shy birds and will allow very close observation, flitting about the bushes and lower trees within a few yards of the watcher, constantly uttering a chirruping cry with occasional clear, loud, whistling notes every now and then. They are restless, active little birds and form a wonderful spectacle of bright colour in front of heavy green bushes and undergrowth.

Genus **MINLA** Hodgson, 1838.

The genus *Minla*, as restricted by Oates and adopted here, contains one Indian bird of pleasing plumage, found on the Himalayas and hill-ranges of Assam. In *Minla* the bill is slender, curved, notched and pointed and about half the length of the head; the tail is as long as the wing and slightly graduated. The head, as in practically all the birds of this Subfamily, is not actually crested but the feathers of the crown are very full and more or less erectile.

(377) Minla ignotincta.

THE RED-TAILED MINLA.

Minla ignotincta Hodgs., Ind. Rev., 1838, p. 33 (Nepal); Blanf. & Oates, i, p. 245.

Vernacular names. *Minla* (Nepal); *Megblim-ayene* (Lepcha).

Description.—Male. The forehead, crown, nape and middle of the upper neck black; a very broad, long supercilium white, meeting the opposite one on the upper back; lores, ear-coverts and a band extending nearly to the end of the supercilium black; back, rump and scapulars deep vinaceous; upper tail-coverts black; tail black, tipped and edged on the outer webs with crimson, the two middle tail-feathers with a white streak at the base of the inner webs, the outer feathers suffused with red on the inner webs; wing-coverts and inner secondaries red, edged with white, the latter also broadly tipped with white; primaries and outer secondaries black, edged with crimson on the greater part of the outer webs; the earlier primaries margined with white near the tips, the outer secondaries tipped with white; chin yellowish white; entire lower plumage yellow, sparingly and narrowly streaked with brown.

Colours of soft parts. Iris greyish or brownish white; bill, upper mandible and tip of lower blackish-horny; rest of lower mandible horny-grey or bluish-greenish-horny; legs and feet

grey-brown to greenish-leaden, with a wax-yellow tinge on toes, more decided in males than females; soles wax-yellow (*Hume*).

Measurements. Length about 140 mm.; wing 62 to 65 mm.; tail about 55 mm.; tarsus about 21 mm.; culmen about 10 to 11 mm.

Female and young male differ from the adult male in having the back, rump, scapulars and upper tail-coverts vinaceous brown; the crimson on the wing is replaced by pinkish white and on the tail by pale red.

Distribution. The Himalayas from Nepal to Eastern Assam in the Miri Hills, South to Manipur, Cachar, Naga Hills, etc.

Nidification. The Red-tailed Minla breeds throughout its range between 5,000 and 10,000 feet, making a most lovely little pendent cup or deep purse of fine green moss, lined plentifully with wool, hair or vegetable down, sometimes hair and down being mixed. They are placed in small forks of bushes 4 to 10 feet from the ground in evergreen forest. The eggs are two or three in number—Hodgson says four—and in colour just like the eggs of *Propasser* or *Siva*, that is to say, deep Hedge-Sparrow's egg-blue with a few spots and specks of black or reddish. Fifteen eggs average $19{\cdot}3 \times 14{\cdot}6$ mm.

The breeding season is May and June.

Habits. The Minla is found up to at least 10,000 feet and possibly still higher in the upper forested portions of the Chambi Valley and Native Sikkim. It is said to go about in small parties, having much the habits of the Sivas, but in the Assam Hills it was very rare and I only saw it in pairs. In these hills it keeps much to the oak and rhododendron forest at about 6,000 feet.

Genus **HYPOCOLIUS** Bonap., 1850.

Since Blanford and Oates's first edition of the Avifauna was published, Mr. W. D. Cumming has written in the Bombay Natural History Society's Journal (vol. xii, pp. 760–765, 1900) some most interesting notes on this curious bird, which tend rather to confirm than to disprove its position in the *Liotrichinæ*. The young are practically the same as the female in plumage and show no signs of barring, so that they cannot be placed in the *Laniidæ* or *Campephagidæ*. It has two moults but the plumage does not seem to differ, except that it is said to be brighter and clearer in the summer than in the winter.

The sexes are dissimilar.

In *Hypocolius* the bill is stout and broad at the base and about half the length of the head; the nostrils are small exposed ovals; the rictal bristles are weak but always clearly visible; the wing is short but pointed, the first primary being minute and the second reaching to the tip of the wing. The tail is long and slightly graduated. The tarsus is very short and stout, shorter than the middle toe and claw and is coarsely scutellated.

(378) Hypocolius ampelinus.

THE GREY HYPOCOLIUS.

Hypocolius ampelinus Bonap., Consp. Av., i, p. 336 (1850) (N.E. Africa); Blanf. & Oates, i, p. 250.

Vernacular names. None recorded.

Description.—Male. From the lores, through the eye widening to a broad band on the nape black; forehead, crown, chin, cheeks, throat, the middle of the abdomen, vent, thighs and under tail-coverts pinkish cream-colour; remainder of the body plumage, wing-coverts and inner secondaries drab-grey; winglet and primary-coverts blackish, shaded with ashy and partially margined with grey; primaries black, with broad white tips shaded with grey on the first two or three; outer secondaries black, broadly edged and tipped with ashy, the black diminishing in amount on the later quills and occupying only a portion of the inner web-tail drab-grey, broadly tipped black.

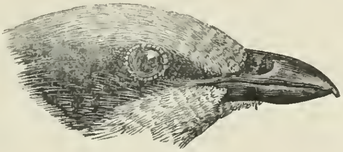


Fig. 68.—Head of *H. ampelinus*.

Colours of soft parts. Irides brown; bill black in the breeding season; flesh-coloured with a black tip in non-breeding season and in the young; legs, feet and claws flesh-colour.

Measurements. Length about 250 mm.; wing 100 to 110 mm.; tail about 115 mm.; tarsus about 23 mm.; culmen 15 to 16 mm.

Female. The upper plumage and the whole wing greyish isabelline, the quills shaded with brown interiorly and edged and tipped with light grey; the tail is merely brown towards the end and tipped paler; the lower plumage pinkish cream-colour, suffused with drab-grey across the breast; there is no black on head or nape.

Nestling. "A fortnight to three weeks old the first primary is almost entirely sooty, all the others being graded with the same" (*Cumming*).

Young male like the female but has the white wing-patch from the earliest stages of plumage.

Immature female has the secondaries tipped with white.

Distribution. Persia, working South in March to Bushire and a little later to Fao and other places on the shores of the Persian Gulf. A rare straggler down the Mekran coast and into Sind and Khelat. First recorded from North-East Africa.

Nidification. Breeds at Fao from the last few days of May to the end of July, making a cup-shaped nest of roots, palm fibre and grass, lined with grass, wool or hair. It is placed generally on a leaf of a date-palm at any height from 3 to 10 feet from the ground; it has also been found in cactus-hedges and, very rarely, in thorny bushes. The eggs number either four or five, occasionally only three, and are a dull white with pale grey blotches and spots of grey. The texture is fine and close but almost glossless and, in shape, they are fairly broad ovals with the smaller end distinctly compressed. The eggs measure about $26·2 \times 18·7$ mm.

According to Cumming "the male assists the female in building the nest and sitting on the eggs.

"The nest is completed in three to four days; one egg is laid daily till the full number is completed, *i. e.*, four or five and about 14 days are taken in incubating."

Habits. Apparently the Hypocolius is locally migratory, leaving the hilly country during the breeding season and taking to the date-gardens and semi-cultivated country.

"The call of these birds is a very pleasing liquid note, nothing like the harsh cry of the Shrikes. The female has only the one call; the male has a different call, but often imitates the female, especially when alarmed; he has also the habit of erecting the feathers of his head when excited. They are more arboreal, at least in Fao, than the Shrikes. They live chiefly on fruit, but also indulge in a little insect diet, as several stomachs I have examined contained legs and wings of beetles etc.

"They become very tame if reared from the nest" (*Cumming.*)

Fig. 69.—*Molpastes leucotis.*

Family PYCNONOTIDÆ.

Oates in the first edition of the Avifauna retained the Bulbuls as a Subfamily, *Brachypodinæ*, of the *Timaliidæ* but they seem to me to be sufficiently well differentiated to warrant them being treated as a separate family. They form a very numerous group of birds, which are found throughout Southern Asia, practically the whole of Africa, and also the extreme South-West of Europe.

The two principal features by which the *Pycnonotidæ* can be distinguished from the *Timaliidæ* are the comparatively short tarsus and the presence of some hairs which grow from the nape. These hairs are often long, fairly numerous and conspicuous, sometimes short, few and inconspicuous but never entirely absent. It is this latter character which separates them from the *Timaliidæ*, which have short tarsi, such as *Chloropsis*, *Ægithina* etc., in addition to which the sexes are alike in the Bulbuls but different in those genera.

In the Bulbuls the young are practically like the adults but sometimes paler and duller and sometimes darker and duller as in *Hemixus*.

The wing is more pointed and longer than in the typical *Timaliidæ* and the bill varies from the short Finch-like bill of *Spizixus* to the long, slender bill of *Microscelis*.

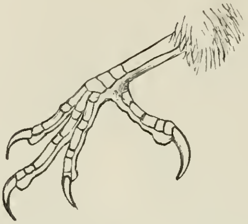


Fig. 70.—Foot of *Microscelis p. psaroides*.

Many Bulbuls are amongst the most common and familiar birds in the gardens and towns of India, whilst others are purely forest birds.

It would be difficult to improve on Oates's key to the genera of Bulbuls, which is given below, practically unaltered.

Key to Genera.

A. Hairs from nape numerous and at least as long as tarsus.
- *a*. Crest long and pointed .... CRINIGER, p. 361.
- *b*. Crest absent or inconspicuous.
  - *a'*. Long hairs springing from back and nape. TRICHOLESTES, p. 366.
  - *b'*. Long hairs springing from nape only .. ALOPHOIXUS, p. 367.

B. Hairs springing from nape short and few, sometimes almost hidden.
- *c*. Feathers of crown and over ear-coverts all similar in shape.
  - *c'*. A distinct crest.
    - *a''*. Nostrils not covered by plumelets.
      - *a'''*. Wing pointed; secondaries falling short of tip of wing by not less than length of tarsus.
        - *a*⁴. Tail forked; the outer feathers curved outwards.
          - *a*⁵. Plumage all black, grey and white or some combination of these .... MICROSCELIS, p. 368.
          - *b*⁵. Plumage of several colours .. CERASOPHILA, p. 373.
        - *b*⁴. Tail square or rounded; outer feathers not curved outwards.
          - *c*⁵. Crest-feathers shorter than tarsus and pointed .... HEMIXUS, p. 374.
          - *d*⁵. Crest-feathers longer than tarsus and rounded .... ALCURUS, p. 379.
      - *b'''*. Wing more rounded; secondaries falling short of tip of wing by less than length of tarsus.

c^4. Crest ample and covering whole crown.

e^5. Tail very slightly rounded, the outer feather falling short of the tip of the tail by less than the length of the hind toe .. MOLPASTES, p. 381.

f^5. Tail greatly rounded .... XANTHIXUS, p. 392.

d^4. Crest thin and confined to centre of crown.

g^5. Feathers of back with soft shafts OTOCOMPSA, p. 394.

h^5. Feathers of back with rigid, spinous shafts .... PINAROCICHLA, [p. 399.

b''. Nostrils nearly concealed by thick plumelets .... SPIZIXUS, p. 400.

d'. Crest inconspicuous or entirely absent.

c''. Upper tail-coverts not reaching to middle of tail.

c'''. Feathers of crown and forehead short and stiff .... TRACHYCOMUS, p. 402.

d'''. Feathers of crown and forehead longer and soft.

e^4. Bill about $\frac{3}{4}$ length of head, compressed and sharply carinate .. IOLE, p. 403.

f^4. Bill about $\frac{1}{2}$ length of head, neither much compressed nor carinate.

g^5. Plumage not squamated .... PYCNONOTUS, p. 410.

h^5. Plumage squamated .... RUBIGULA, p. 409.

d''. Upper tail-coverts reaching nearly to end of tail...................... MICROTARSUS, p. 422.

d. Feathers on sides of crown and over ear-coverts long and pointed, contrasting with the rounded feathers of forehead ...... KELAARTIA, p. 426.

Genus **CRINIGER** Temm., 1820.

The genus *Criniger* may be known from all the other Bulbuls by the presence of a long pointed crest and numerous very long hairs springing from the nape and hind neck. The tails of all the Indian and Burmese species are, moreover, rufous, a character shared by few other Bulbuls.

Fig. 71.—Head of *C. t. flaveolus*.

In *Criniger* the bill is strong and about half the length of the head and the culmen is curved throughout; the rictal bristles are well developed. The wing is blunt; the tail short and rounded and the tarsus short but very strong. The plumage is very soft.

The earliest name for any form of *Criniger* is *tephrogenys* of Jardine and Selby and the description undoubtedly applies to one of the southern forms, though no locality is given. In the Journal of the Bombay Natural History Society I designated the type-locality as South Tenasserim (vol. xxvii, p. 466, 1921).

The female is a good deal smaller than the male.

Key to Subspecies.

A. Lower plumage yellow.
 a. Chin and upper throat white; crest greenish yellow . . . . *C. tephrogenys flaveolus*, [p. 363.
 b. Chin, throat and upper breast white; crest greyish . . . . *C. t. burmanicus*, p. 364.

B. Lower plumage darker and more ochraceous.
 c. Wing under 105 mm.
  a'. Chin and throat white; crest rufescent olive-brown . . . . *C. t. tephrogenys*, p. 362.
  b'. Chin, throat and upper breast white; crest olive-grey . . . . *C. t. griseiceps*, p. 365.
 d. Wing over 110 mm. . . . . *C. t. grandis*, p. 365.

(379) Criniger tephrogenys tephrogenys.

The Malayan White-throated Bulbul.

Tricophorus tephrogenys Jard. & Selby, Ill. Ind. Orn., pl. xxvii (1833) (no locality) (Tenasserim).
Criniger gutturalis. Blanf. & Oates, i, p. 256.

Vernacular names. None recorded.

Description. Whole upper plumage olive-brown with an ochraceous tinge, rufescent on the head, crest and upper tail-coverts; tail rufous-brown tipped paler; wings brown, the outer webs of the feathers rufescent; lores and a ring round the eye greyish; ear-coverts brown with pale shafts; chin and throat white; lower plumage fulvous-brown tinged with ochre and ochraceous yellow on the centre of the abdomen; under tail-coverts buff.

Colours of soft parts. Iris wood-brown; upper mandible dark horny-brown, lower mandible plumbeous; legs and feet pinkish brown (*Hume & Davison*).

Measurements. Length about 230 mm.; wing 96 to 102 mm.; tail about 100 mm.; tarsus 17·5 to 18·5 mm.; culmen about 18 mm.

Distribution. The extreme South of Tenasserim and S.W. Siam down the Malay Peninsula. The true *gutturalis* from Borneo is a darker, browner bird below.

Nidification. Nest and eggs sent me by Mr. W. A. T. Kellow, from near Taiping, Federated Malay States, were all found in March, April and May, some of these taken in the first month

were already hard-set. The nests, which were taken in dense forest in amongst the heaviest undergrowth, were placed in low bushes on the banks of, or close to, forest streams. They were bulky cups of leaves, roots, twigs, moss etc. with a thick lining of bamboos, inside which again there was a true lining of roots both fine and coarse. The eggs, two in number in each case except once when there were three, are very beautiful. The ground-colour varies from a pale wine-coloured pink to the deepest salmon and the whole surface is more or less covered with blotches, smudges and a few spots and scrawls of deep bright red. The surface is intensely glossy, the shell hard and fine and in shape they are rather long ovals, generally well pointed at the smaller end. Nine eggs average 25·2 × 18·5 mm.

Habits. Similar to those of the better-known *C. t. flaveolus* from the Sub-Himalayas. They are birds of dense evergreen forests at low levels, go about in small flocks in the non-breeding season and are very noisy birds. They keep much to the lower trees and undergrowth.

(380) Criniger tephrogenys flaveolus.

THE INDIAN WHITE-THROATED BULBUL.

Trichophorus flaveolus Gould, P. Z. S., 1836, p. 6 (India) (Cachar).
Criniger flaveolus. Blanf. & Oates, i, p. 255.

Vernacular names. *Kussap-eechiop-pho* (Lepcha); *Dao-balip-gurrmo-didi* (Cachari).

Description. Differs from the last in having the upper plumage more green, the edges of the feathers being distinctly olive-green; the lower surface is a bright yellow, the chin and upper throat alone being white; there is a white supercilium always present and sometimes quite conspicuous.

Colours of soft parts. Irides deep red; bill pale greyish blue, gape and mouth still paler; legs greyish-horny, pale bluish-horny or fleshy-grey.

Measurements. Total length about 210 to 220 mm.; wing 88 to 96 mm.; tail about 83 mm.; tarsus about 18 to 20 mm.; culmen 17 to 18 mm.

Distribution. The Sub-Himalayas from Garhwal and Nepal, where it is apparently very rare, to the East of Assam, North and South of the Brahmaputra, Manipur and Tippera.

Nidification. This fine Bulbul breeds in some numbers in all the ranges of hills south of Assam from 1,000 feet, or even lower, to above 5,000 feet. At first I took most of my nests at higher elevations but later, when I knew the bird's habits better, I found it extremely common below 2,000 feet and many nests were taken in the ever-wet, deep forests of the lower valleys. They were almost always placed near running water and a favourite

site was low down in some thick tangle of canes and bushes growing amongst palm-ferns. The nests are very heavily made, hemispherical cups of leaves, bamboo-spathes etc., wound round with roots, grass and stems of weeds; the inner lining is generally of bamboo leaves but there is always also a true lining of coarse, red roots of ferns and bracken. Roughly the nests average about 5″ × $2\frac{1}{2}$″ externally and $3\frac{1}{2}$″ × $1\frac{3}{4}$″ internally. Oates mentions finding these nests 10 feet up in small trees but nearly all mine were less than 4 feet from it. The birds lay in May and June and often during the early rains of July and August, and in North Assam and Sikkim, where the rains do not break until June, few nests will be found before that month. The normal clutch of eggs is two only, sometimes three and very rarely four. They are extremely beautiful eggs; the ground-colour is a deep salmon, rarely with a lilac tinge, and the markings consist of irregular lines, specks and blotches of different shades of blood-red and maroon with secondary markings, sometimes absent, of grey and neutral tint. The markings are generally rather profuse everywhere, but in some are confined to the larger end and the lines are generally on this part of the egg. The surface is hard, fine and intensely glossy and the shape is a long oval, distinctly pointed at the smaller end.

One hundred eggs average 26·9 × 18·6 mm. and the extremes are **27·5** × 18·6 mm.; 26·1 × **20·0** mm.; **23·3** × 18·3 mm. and 24·8 × **18·0** mm.

Habits. Though this Bulbul may be found up to 6,000 feet, it is typically a bird of the humid forests of valleys between 1,000 and 3,000 feet. On rare occasions it may wander into bamboo-jungle but it is essentially a resident of tree-forest with the most thickly grown underwood. It is, unlike most Bulbuls, really gregarious, wandering about the bushes, cane-brakes and scrub in small parties of half-a-dozen to a dozen, creeping and clambering about them very much in the same manner as do the Laughing-Thrushes. It is, however, a good flyer when forced to take wing, though it prefers pedestrian work when possible. It feeds on both insects and seeds and fruit, and in North Cachar was very partial to the berries of a babool-like tree (*Phyllanthus emlica*), swallowing them whole although they were as big as marbles. They are noisy birds with a few sweet calls and many discordant ones.

(381) Criniger tephrogenys burmanicus.

THE BURMESE WHITE-THROATED BULBUL.

Criniger burmanicus Oates, Fauna B. I., Birds, i, p. 256 (1889) (Toungkoo).

Vernacular names. None recorded.

Description. Similar to *C. t. flaveolus* but with the upper parts less olive-green and more greyish, especially on the head and crest; the upper breast is white as well as the chin and throat.

Colours of soft parts as in the last.

Measurements. A rather larger bird than *flaveolus*; wing 95 to 102 mm.

Distribution. Hills East of the Salwin from Yamethin to Moulmein.

Nidification. Nest and eggs sent me from near Moulmein are quite indistinguishable from those of the last bird. They were taken in March and May, the nests being placed in low bushes on the outskirts of heavy forest. Nine eggs average 25·1 × 18·4 mm.

Habits. According to Oates this is more of a tree bird than either of the two previous races. Davison also remarks that it never descends to the ground as the Indian bird often does but otherwise he describes it as being the same energetic, noisy bird as that race is. Their song, he writes, is a feeble "twee, twee, twee."

(382) Criniger tephrogenys griseiceps.

Hume's White-throated Bulbul.

Criniger griseiceps Hume, S. F., i, p. 478 (1873) (Upper Pegu); Blanf. & Oates, i, p. 257.

Vernacular names. None recorded.

Description. This form is close to typical *tephrogenys* but has the upper parts olive-grey rather than rufescent brown and the upper breast, as well as the throat and chin, is white; the rest of the under parts are ochraceous as in that bird.

Colours of soft parts as in the last.

Measurements. A rather smaller bird than *gutturalis*, with a wing between 90 and 98 mm., according to sex, and other measurements in proportion.

Distribution. Central West Burma, South to North Tenasserim.

Nidification. Not recorded.

Habits. Those of the genus.

(383) Criniger tephrogenys grandis.

The Yunnan White-throated Bulbul.

Criniger pallida grandis Stuart Baker, Bull. B. O. C., xxxvii, p. 15 (1917) (Yunnan).

Vernacular names. None recorded.

Description. Upper parts olive-brown, the head browner; lower parts pale olive-yellow, the flanks olive-green and the under tail-coverts buff; the yellow is deeper and more olive than in *pallida*. Nearest to the Hainan form, *C. t. pallida* but much bigger, with a wing 114 to 119 mm. as against 100 to 115 in that bird, according to Oustalet, or 98 to 105, according to the British Museum series.

C. t. henrici is intermediate in size but yellower on the under parts.

Colours of soft parts. Iris red; bill bluish grey, darker on tip and culmen; legs fleshy-grey.

Measurements. The largest of all the forms of White-throated Bulbuls, with a wing 114 to 119 mm.

Distribution. Yunnan and N.E. Shan States. Siam birds seem referable to *C. t. henrici*, a smaller form in the South from Annam, Cochin China etc. Oustalet's larger birds from Yunnan should probably all be *grandis*.

Nidification and **Habits** not recorded.

Genus **TRICHOLESTES** Salvadori, 1874.

The genus *Tricholestes* is remarkable for the numerous long hairs which spring from the back; these hairs lie close to the feathers and are not distinctly visible until they are lifted up.

In *Tricholestes* the bill is very strong for the size of the bird. The culmen is straight for half its length and the tip of the upper mandible is strongly tipped and notched. The frontal and rictal bristles are long. The head is not crested. The wing is blunt, the tail slightly rounded and the feet are exceedingly small and weak.

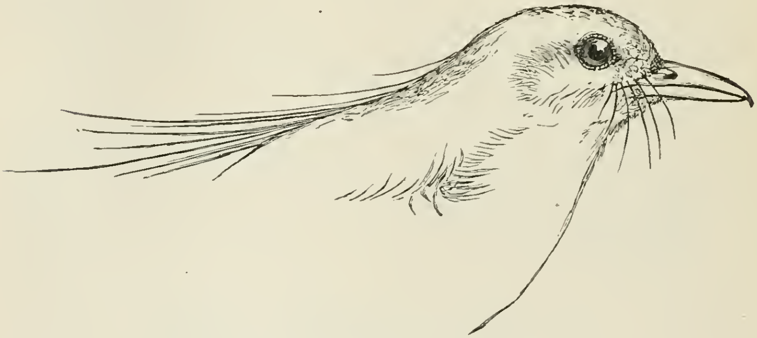


Fig. 72.—Head and back of *T. c. criniger*.

(384) Tricholestes criniger criniger.

THE HAIRY-BACKED BULBUL.

Brachypodius (?) *criniger* Blyth, J. A. S. B., xiv, p. 577 (1845) (Malacca).
Tricholestes criniger. Blanf. & Oates, i, p. 258.

Vernacular names. None recorded.

Description. Forehead and crown olive-brown; hind neck, back and rump dull olive-green; wing-coverts browner; quills

brown, the inner secondaries and the outer webs of the others rufescent; tail rufescent, the outer webs tinged with greenish and the outer feathers tipped with whitish; lores and sides of the head yellow, the latter feathers tipped with dusky; chin and throat whitish; lower plumage yellow, the breast and sides of the body tinged with ashy; under tail- and wing-coverts yellow.

Colours of soft parts. "Legs and feet pale bluish or pinkish brown or salmon-fleshy; claws pale plumbeous blue; lower mandible and edge of the upper pale plumbeous; ridge of culmen and tip of upper mandible black; rest of the upper mandible dark plumbeous, sometimes horny brown; iris pale umber or snuffy-brown to dark brown" (*Hume & Davison*).

Measurements. Total length about 180 mm.; wing 70 to 77 mm.; tail about 70 to 75 mm.; tarsus 15 mm.; culmen about 15 mm.

Distribution. The extreme South of Tenasserim and S.E. Siam to the South of the Malay Peninsula. The Sumatran and Bornean form has been separated as *Tricholestes c. viridis*.

Nidification. Two eggs of the form *viridis* in the collection of Mr. J. Davidson and taken by a correspondent of Herr M. Kuschel in W. Java are very like the eggs of *Iole icterica*. The ground-colour is a pronounced pink, thickly mottled all over with a darker brownish pink, the mottling only a little darker than the ground-colour, so that at a short distance they look uniform. In shape they are long ovals and they measure about 23·2 × 16·0 mm.

Habits. Davison records that "This little Bulbul goes about in small parties of five or six, keeping to the brushwood and following each other about from bush to bush, uttering all the while a soft twittering note. In its habits it approaches much nearer the Timaliine birds than the Bulbuls, like them hunting systematically the foliage and branches of the brushwood and smaller trees. . . . One specimen I shot was quite alone and was perched on a dead twig, where it kept expanding and closing its tail spasmodically and bobbing about exactly like a Flycatcher. Their food consists almost exclusively of insects, though they do occasionally eat a few small berries. They are very tame birds and their plumage apparently never in good condition, so that it is impossible ever to make up a really good specimen."

Genus **ALOPHOIXUS** Oates, 1889.

This genus was created by Oates for a species previously placed in the genus *Criniger*. It differs from that genus in having no crest and from *Tricholestes* in not having such long back-hairs. Bill, wings and tail are very similar to those of *Criniger*.

There is but one species at present referred to this genus.

(385) Alophoixus phæocephalus.

THE CRESTLESS WHITE-THROATED BULBUL.

Ixos phæocephalus Hartl., Rev. Zool., p. 401 (1844) (Malacca).
Alophoixus phæocephalus. Blanf. & Oates, i, p. 259.

Vernacular names. None recorded.

Description. Crown of head and nape blackish, each feather edged with bluish-grey; lores whitish; back, rump and upper wing-coverts olive-green, the lateral feathers of the rump washed with yellow at the tips; upper tail-coverts and tail rufous-brown; wings dark brown, the feathers rufescent on the outer webs; sides of the head and neck and a narrow half-collar on the hind-neck ashy-grey, darker posteriorly; chin and throat white; remaining lower plumage bright yellow washed with olive on the sides of the body; under wing-coverts yellow.

Colours of soft parts. "The legs, feet and claws vary from fleshy white (sometimes with a pinky tinge) to fleshy yellow; the upper mandible from dark plumbeous to dark horny brown; lower mandible and edges of upper mandible pale plumbeous; irides snuff-brown, burnt sienna-brown or reddish brown" (*Hume & Davison*).

Measurements. Length about 200 to 210 mm.; wing 86 to 95 mm., the female averaging some 5 mm. less than the male; tail about 70 to 90 mm.; tarsus about 20 mm.; culmen 14 to 17 mm.

Distribution. The extreme South of Tenasserim to Sumatra, Java and Borneo.

Nidification. Nothing recorded.

Habits. Davison found this bird either singly or in pairs in thick forest or thin tree-jungle and, though common, never in gardens or clearings. In its general habits it closely resembles birds of the genus *Criniger.* It is never found on the ground.

Genus MICROSCELIS Gray, 1840.

The name *Hypsipetes* by which this genus of Bulbuls has hitherto been known is unfortunately preoccupied by *Yypsipetes* (Stephens, Syst. Brit. Ins., ii, p. 138, 1829) and the next name applicable is *Microscelis* of Gray (List Gen. Birds, 1840, p. 28), created for *M. amaurotis*, a Japanese Black Bulbul which cannot, I think, be separated generically from our Indian and Burmese forms. *Haringtonia* of Mathews and Iredale seems to me to be unnecessary.

The genus contains a group of Bulbuls characterized by grey and blackish plumage, red bills and long, forked tails. The bill is slender and about as long as the head, which is furnished with a long crest of pointed feathers. The rictal bristles are very short, not exceeding a third of the length of the culmen. The wing is

pointed, the secondaries falling short of the tip by a considerable distance. The tail is distinctly forked and the outer feathers curved outwards. The tarsus is smooth and very short (see fig. 70, p. 360), being between a sixth and a seventh of the length of the wing. There is only one species found within our limits but that is represented by numerous geographical races. The genus extends from India to Japan.

Microscelis psaroides.

Key to Subspecies.

A. Crown of head black, contrasting with paler grey of back and clearly defined from it.
  a. A black streak behind and under the ear-coverts.
    a′. Paler grey both above and below.... *M. psaroides psaroides*, [p. 369.
    b′. Darker bluish grey above and below . *M. p. nigrescens*, p. 371.
  b. No black streak behind or under the ear-coverts .... *M. p. ganeesa*, p. 372.
B. Crown of head black, gradually merging into the blackish grey of back and upper parts.............................. *M. p. concolor*, p. 372.

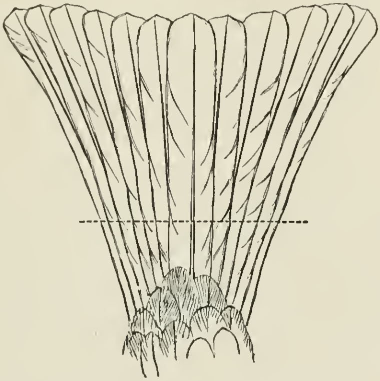


Fig. 73.—Tail of *M. p. psaroides.*

(386) Microscelis psaroides psaroides.

THE HIMALAYAN BLACK BULBUL.

Hypsipetes psaroides Vigors, P. Z. S., 1831, p. 43 (Himalayas, Simla); Blanf. & Oates, i, p. 260.

Vernacular names. *Ban Bakra* (at Mussoorie); *Phaki-pho* (Lepcha); *Durkal* (Chamba).

Description. Crown from forehead to nape, lores, a spot at the base of the lower mandible, another at the angle of the chin and a broad stripe round the ear-coverts black; a spot above the lores grey; upper plumage and wing-coverts dark grey; remainder

of wings and tail black; ear-coverts, chin, throat, breast and flanks grey; abdomen and vent paler, the feathers being grey with white edges; under tail-coverts grey with broad white margins.

Fig. 74.—Head of *M. p. psaroides.*

Colours of soft parts. Iris dark or hazel-brown; bill and legs bright coral-red, the claws horny-brown.

Measurements. Length about 250 mm.; wing 120 to 130 mm.; the females, as usual, being decidedly the smaller; tail about 112 to 120 mm.; tarsus about 18·5 to 19·5 mm.; culmen about 21 mm.

Distribution. Western Himalayas to Bhutan. How far this bird extends East in Assam is not yet known. A specimen obtained by Dr. Falkiner in the Abor Hills is nearer the next form; one of the big tributaries of the Brahmaputra such as the Subansiri or the Dihang will probably be the dividing line between the two.

Nidification. The Himalayan Black Bulbul breeds in considerable numbers at all heights between 2,000 and 7,000 feet, occasionally even higher than this. The principal breeding months are May and June but eggs are laid both earlier and later by at least a month. The nest is generally a rather shallow cup, made of almost any vegetable material but for the main part of fine elastic twigs, lichen, roots and a few leaves well plastered with cobwebs where it is attached to the horizontal fork in which it is cradled. Often it is placed at very great heights from the ground, 50 or 60 feet up on the outer branches of some great forest tree; at other times it is placed in a small sapling and yet again, though but very rarely, in a tall bush. It is usually a very difficult nest to find and an even harder one to obtain when found. The site selected is most often in thin forest on the outskirts of heavier forest but it does now and then build well inside the interior of very dense forest.

The eggs number two or three or, according to Hodgson, four and are very like the eggs of the common forms of *Molpastes* though so much bigger. The ground varies from pure white to pale pink or even a fairly warm salmon-pink and are covered, generally densely, sometimes only sparingly, with specks, spots and small blotches of various shades of red, reddish brown or umber-brown with others underlying these of neutral tint and

grey. The texture is neither very fine nor very close; the gloss is but slight or even altogether absent and the normal shape is a rather long, well-pointed oval. Fifty eggs average 26·2 × 19·1 mm. and the extremes are **28·2** × **20·0**, **23·8** × 18·7 and 25·2 × **18·3** mm. The longest egg is also the broadest.

Habits. The Himalayan Black Bulbul is the exact opposite of the White-throated Bulbul in most of its ways. It is equally noisy and equally discordant in its notes but it is essentially a bird of high tree-tops, a percher and not a climber, a free and fairly easy flyer and largely vegetarian in its diet. The nectar of flowers, which Oates says it takes, is probably swallowed together with the numerous small insects which frequent these same flowers and upon which the Bulbuls feed. It goes about regularly in flocks all through the winter, sometimes two flocks combining where food is plentiful, and they have a curious follow-my-leader style when flying from one tree to another. It is a very bold bird and has no objection to being watched but it is naturally restless and unless on some tree, such as a Bombax in flower, which offers particularly fascinating food, soon flits away out of sight.

It is never found except in really well-forested hills and mountains which it ascends to about 9,000 feet elevation.

(387) Microscelis psaroides nigrescens.

THE ASSAM BLACK BULBUL.

Hypsipetes psaroides nigrescens Stuart Baker, Bull. B. O. C., xxxviii, p. 15 (1917) (Upper Chindwin).

Vernacular names. *Dao-bulip gashim* (Cachari).

Description. Differs from *M. p. psaroides* in being very much darker both above and below; at the same time it is a paler bird than *M. p. concolor* and has the black crown and the head distinctly defined from the paler, blackish grey of the back.

Colours of soft parts and **Measurements** much as in the last, though they average a little bigger.

Distribution. South Assam, Manipur, Arrakan and the Northern Chin Hills apparently as far East as the Chindwin, but not to the Irrawaddy. It is also found in North-East Assam and the Abor Hills.

Nidification. Similar to that of the last bird but moss seems to be far more used in the construction of the nest and in some cases this material forms practically the whole of the nest. Like the last bird this also is one of the very few that employ pine-needles as a lining to their nests. The eggs cannot be distinguished from those of the Himalayan race. 100 average 27·1 × 19·7 mm., with extremes of **29·0** × 19·2, 27·0 × **20·5**, **24·7** × 19·3 and 25·8 × **18·0** mm.

Habits. Those of the genus. It is found up to 6,000 or 7,000 feet and descends almost to the plains. It was common in Margherita at about 700 feet and in the winter in N. Lakhimpur extends well into the plains.

(388) Microscelis psaroides concolor.

THE BURMESE BLACK BULBUL.

Hypsipetes concolor Blyth, J. A. S. B., xviii, p. 816 (1849) (Tenasserim); Blanf. & Oates, i, p. 261.

Vernacular names. None recorded.

Description. Differs from *M. p. psaroides* in having the grey very dark, darker even than in *nigrescens* and in having the black of the head merge into the slightly paler back without any definition between the two.

Colours of soft parts and **Measurements** as in the Himalayan form.

Distribution. Eastern Burma, Shan States, Yunnan, Siam and South Burma to Muleyit Mountain. Anderson's *yunnanensis* cannot be separated from this form.

Nidification. Similar to that of the other birds of this genus. Twelve eggs average 27·2×19·4 mm., these few varying very little either in size or shape.

Habits. This is a forest bird, according to Davison keeping more to the outskirts of jungle, clearings and more open forest than the other races do. It is found from the level of the plains in winter to at least 7,000 feet in the Kachin Hills in summer.

(389) Microscelis psaroides ganeesa.

THE SOUTHERN INDIAN BLACK BULBUL.

Hypsipetes ganeesa Sykes, P. Z. S., 1832, p. 86 (Deccan); Blanf. & Oates, i, p. 262.

Vernacular names. *Kele Kondiya* (Ceylon).

Description. Differs from all the other races in having no black line round the ear-coverts; the grey is darker than in the Himalayan form but the head is sharply defined from the back. There is little or no white on the abdomen.

Colours of soft parts. "Iris hazel dyed with lake-red; bill orange-vermilion; feet orange-yellow" (*Fairbank*).

Measurements. This is the smallest of all the races except for some specimens from the extreme South of Burma. Wing 112 to 120 mm., tail about 100 to 105 mm.

Distribution. India South from Matheran and Ceylon. McMaster obtained it at Chikaldar on the Garwilgurgh Hills in Berar.

Nidification. The Southern Black Bulbul seems normally to frequent higher elevations for breeding purposes than do the other races and will not often be found breeding below 4,000 feet. It builds a nest similar to those of its relations elsewhere but makes a greater use of dead leaves in its construction. It is often placed at very great heights and seldom on saplings or bushes. The eggs are almost invariably two only and differ from those of the

Himalayan form in being more weakly marked, less handsome eggs and also in being generally a shorter, blunter oval. Thirty eggs average 26·6 × 19·5 mm. and vary in length between 28·3 × 19·3 mm. and 25·0 × 19·2 mm. and in breadth between 27·0 × 20·6 and 26·3 × 19·0 mm. They breed from February to July.

Habits. Those of the genus. They are never found in the plains and seldom below 2,000 feet, even in winter. Mr. Rhodes Morgan records having seen these Bulbuls "migrating in vast flights, numbering several thousands, in the Bolumputty Valley in July. They were flying westwards towards Malabar."

They frequent both the outskirts of forests and heavily-wooded districts and also small spinneys and *sholas* standing in the hollows of grass-covered hills.

Genus CERASOPHILA Bingham, 1900.

This genus was created by Bingham for the reception of a very remarkable Bulbul, probably nearest to the genus *Microscelis* (*Hypsipetes* auct.). Like that genus the tarsi are short and non-scutellate and the tail is rather long and forked. The culmen is more curved than in *Microscelis* but it differs principally from that genus in having a bare unfeathered patch of skin round the eye. The under tail-coverts are brightly coloured as in *Molpastes* and *Otocompsa*.

(390) Cerasophila thompsoni.

BINGHAM'S WHITE-HEADED BULBUL.

Cerasophila thompsoni Bingham, A. M. N. H., (7) v, p. 358 (1900) (Loi-San-Pa, 6,500 feet, S. Shan States).

Vernacular names. None recorded.

Description. "The whole head and neck snow-white, the white of these parts abruptly defined from the back and breast, and extending further down on the upper back than on the sides of the neck and breast: the back, rump, upper tail-coverts, wing-coverts, scapulars, the outer webs of the two inner tertiaries, the breast, sides, and stomach a clear ash-grey; the primary wing-feathers, the secondaries, the tertiaries, with the exception noted above, and the tail hair-brown; vent and under tail-coverts light bright chestnut; the under wing-coverts and axillaries, the lower portion of the stomach, and some of the lower feathers on the thighs pale grey with a wash of light chestnut."

Colours of soft parts. "Bill, legs and feet coral-red, claws horny: a bare patch of skin round the eyes, conspicuously wider below the eyes than above it, greyish tinged with yellow, the eyelids with a rim of bright vermilion-red. Iris whitish-yellow to pale yellow."

The sexes are alike in plumage and differ only very slightly in size.

Measurements. "♂. Length 7·8 inches, wing 3·8, tail 3·8, tarsus 0·7, bill from gape 0·85. ♀. Length 7·8 inches, wing 3·7,

tail 3·85, tarsus 0·7, bill from gape 0·85. These measurements were taken in the flesh." (*Bingham.*)

Distribution. Southern Shan States, North-West Siam and East Central Burma. Wickham reports it as not uncommon at Taung-gyi.

Nidification unknown.

Habits. According to Wickham this is a Bulbul of high elevations during the breeding season, when it is found from 6,000 feet upwards. In the non-breeding season it comes down to lower elevations between 3,000 and 4,000 feet, going about in small flocks. Their note is harsh but quite typical of the family.

Genus **HEMIXUS** Hodgson, 1844.

The genus *Hemixus*, of which *H. flavala* is the type, contains two Indian species and many subspecies. It differs from *Microscelis* in having the tail square or slightly rounded and its outer feathers straight. The crest consists of a great number of short but sharply-pointed feathers. The nuchal hairs are short and indistinct, but the rictal bristles are strong. The wing is pointed, the secondaries falling well short of the longest primaries.

The bill is like that of *Microscelis* but the tarsus is slightly shorter, though this is not noticeable in dry skins.

Key to Species and Subspecies.

A. Tail dark brown.	
a. Head and back practically concolorous	*H. flavala flavala*, p. 374.
b. Head much darker and contrasting with the back.	
a′. Back brown, though lighter than head	*H. fl. davisoni*, p. 376.
b′. Back grey	*H. fl. hildebrandi*, p. 376.
B. Tail green.	
c. Back green.	
c′. Breast and sides of neck strongly rufous; throat nearly pure white	*H. macclellandi macclellandi*, [p. 377.
d′. Breast and sides of neck merely tinged rufous; throat grey......	*H. m. tickelli*, p. 378.
d. Back brown	*H. m. binghami*, p. 379.

(391) Hemixus flavala flavala.

THE HIMALAYAN BROWN-EARED BULBUL.

Hemixus flavala Hodgs., J. A. S. B., xiv, p. 572 (1845) (Nepal); Blanf. & Oates, i, p. 263.

Vernacular names. *Nalli-pindi* (Lepcha), *Dao bulip-gadeba* (Cachari).

Description. Upper plumage and smaller wing-coverts dark ashy, the feathers of the crown edged paler and the upper tail-coverts tinged with olive-green; tail brown, tinged with olive-

green on the basal half of the outer webs; greater coverts brown on the inner and olive-yellow on the outer webs; quills brown, the earlier primaries edged with grey below the emarginations; all the other quills margined with olive-yellow, very narrow on the outermost and increasing until it covers the whole of the outer webs of the innermost secondaries; lores and cheeks blackish; ear-coverts bronze-grey; chin, throat, centre of the abdomen, vent and under tail-coverts white; breast, sides of neck and flanks grey.

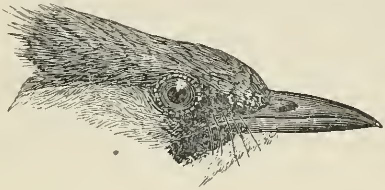


Fig. 75.—Head of *Hemixus fl. flavala.*

Colours of soft parts. Irides dull crimson or reddish brown; bill black; the legs vary much between horny-brown and dark plumbeous, in a few specimens being almost black.

Measurements. Length about 210 mm.; wing 94 to 99 mm.; tail about 86 mm.; tarsus about 18 mm.; culmen about 15 mm.

The female is, as usual, a little smaller; wing about 90 to 96 mm.

In the **young** the crown is very dark, showing up as a distinct cap.

Distribution. Himalayas from Mussoorie to Eastern Assam, N. Chin Hills, Kachin Hills to Yunnan. South Assam, Manipur, Chittagong Hill tracts and Arrakan.

Nidification. This Bulbul breeds at elevations between 3,000 and 6,000 feet in scrub-jungle and the dense secondary growth on deserted cultivation, or occasionally in the undergrowth of forests. It is very partial to the banks of tiny streams such as are dry during the winter but form rapid little water-courses during the rains. The nest is a rather deep cup, composed outwardly of grass stems only. Sometimes a few bamboo leaves, a twig or two and some roots may be added to the other materials, but it is curious that whatever the article chosen it is nearly always yellow, tan, or pale brown in colour. Externally the nests roughly average about 3·5″ × 2·5″ and they are nearly always placed close to the ground, somewhere between 2 and 5 feet from it, and well hidden in a thick bush or dense mass of brambles or creepers. Nests may be found any time from early May to late July.

The eggs are either two or three in number, rarely four, and vary in ground-colour from pearly-white to pale salmon. They are profusely covered all over with specks and spots of light pinkish red to a reddish brown. In shape they are rather long,

often pointed, ovals. Fifty eggs average 23·6 × 17·3 mm., the extremes being **25·5 × 18·0** mm., **22·1** × 17·6 mm. and 24·0 × **16·3** mm. The greatest length and breadth occurs in the same egg.

Habits. The Brown-eared Bulbuls come well into the plains in winter but in summer keep above 2,000 feet and ascend to 6,000 or perhaps 7,000 feet. They collect in very large flocks containing 20 to 30 individuals and haunt both the higher trees and low scrub and brushwood. They are noisy birds and have many harsh notes but they also have a rather pretty, jerky little song which they sing at all seasons. They keep much to the more open wooded parts until the breeding season commences, when they retire to the deeper forests. They have a curious habit of swinging themselves on the pliant ends of the small bamboo, *Bambusa vulgaris,* several birds often perching on the same hanging end and evidently enjoying themselves as they sway in the breeze.

(392) Hemixus flavala davisoni.

DAVISON'S BROWN-EARED BULBUL.

Hemixus davisoni Hume, S. F., v, p. 111 (1877) (Tenasserim); Blanf. & Oates, i, p. 264.

Vernacular names. *Nyen-boh-ka-lone* (Burmese).

Description. Differs from *H. fl. flavala* in having the entire crown and nape a rich dark brown, the upper parts a paler brown and the yellow on the wings less in extent; the breast is ashy rather than grey.

Colours of soft parts as in the last.

Measurements. This race seems to average a trifle larger than the last, the wing being between 97 and 102 mm.

Distribution. Tenasserim, Meetan and Thoungyah.

Nidification and Habits. Nothing recorded beyond Davison's statement that it is confined to the hill-forests of the southern half of Tenasserim.

(393) Hemixus flavala hildebrandi.

HILDEBRAND'S BROWN-EARED BULBUL.

Hemixus hildebrandi Hume, S. F., ii, p. 508 (1874) (Salween Dist.); Blanf. & Oates, i, p. 264.

Vernacular names. *Nyen-boh-ka-lone* (Burmese.)

Description. Differs from Davison's Brown-eared Bulbul in having the head still darker, almost a blackish brown and the upper parts more grey and less brown.

Colours of soft parts similar to those of the other races.

Measurements. This is the largest race of the three, having a wing between 100 and 105 mm.

Distribution. Salween and Karen Hills.

Nidification and Habits. Nothing recorded. Three eggs sent me with the bird from Karen Hills measure 22·1 × 17·0 mm. The nest is in appearance just like that of *H. fl. flavala* and was said to have been placed in a thick bush in scrub-jungle.

(394) Hemixus macclellandi macclellandi.

THE RUFOUS-BELLIED BULBUL.

Hypsipetes macclellandi Horsf., P. Z. S., 1839, p. 59 (Assam).
Hemixus macclellandi. Blanf. & Oates, i, p. 265.

Vernacular names. *Chinchiok-pho* (Lepcha); *Chichiam* (Lepcha); *Dao-bulip-gadeba* (Cachari).

Description. Forehead, crown and nape bright vandyke-brown, the shafts pale reddish white, giving a streaky appearance; remainder of upper plumage, wing-coverts and inner secondaries olive-green, brightest and sometimes more yellow on the upper tail-coverts; tail bright olive-green; quills brown edged with olive-green; lores and cheeks grey or grey and white; ear-coverts, sides of neck, breast and flanks chestnut; abdomen white, more or less suffused with rufous; under tail-coverts yellowish rufous.

Colours of soft parts. Iris hazel, red-brown to red; bill, upper mandible dark blue-grey, culmen, tip and base of lower mandible dusky, remainder fleshy-white; legs dull yellowish- to purplish-brown.

Measurements. Total length about 240 mm.; wing 106 to 110 mm.; tail about 110 mm.; tarsus about 19 mm.; culmen 20 mm.

Distribution. Himalayas from Mussoorie to E. Assam both North and South of the Brahmaputra River, Chin Hills, Manipur, Lushai and Arrakan.

Nidification. The Rufous-bellied Bulbul breeds between 3,000 and 7,000 feet, from the end of May to the beginning of August. The nest is a large, rather shallow cup of grass, bamboo leaves, shreds of bark and long roots which are wound round the branches of the horizontal fork from which it is always suspended. It is generally an untidy, loosely-built nest but very strong. The lining is of fine grasses only, very rarely a few roots being added. The site selected is the outer branch of a tree at some height between 20 and 40 feet from the ground, the chosen tree standing either on the outskirts of forest, in scattered tree and bamboo jungle or sometimes in dense forest when this is broken by a stream or some natural clear space.

The eggs are generally two only in number and are very like those of the genus *Microscelis* but on the whole are duller, less

richly coloured eggs and the texture is distinctly more fragile and coarser, the surface seldom having any gloss. Fifty eggs average 26·2 × 18·2 mm. and the extremes are **28·1** × 19·0 mm., 27·3 × **19·3** and **22·0** × **16·0**. The last is both the shortest and most narrow.

Habits. This Bulbul is not gregarious though, where food is plentiful, two or three pairs may be found in company. They frequent lighter forest, bush and scrub in preference to heavy forest, rarely entering these to any depth except in the breeding season. They are quiet birds but have a few musical notes and a loud mellow call, a whistle with three ascending notes. It is found up to about 7,000 feet and in winter descends to 2,000 feet. It is a most amiable bird and will allow much smaller birds to drive it away from food without making any protest.

(395) Hemixus macclellandi tickelli.

TICKELL'S BULBUL.

Hypsipetes tickelli Blyth, J. A. S. B., xxiv, p. 275 (1855) (Interior of Tenasserim).
Hemixus tickelli. Blanf. & Oates, i, p. 265.

Vernacular names. None recorded.

Description. Differs from the Rufous-bellied Bulbul in having the lower plumage grey tending to white on the abdomen and the breast streaked with whitish shaft-stripes; the ear-coverts and the sides of the neck are pale rusty, which colour also tinges the breast; the shaft-stripes of the crest-feathers are broader and whiter; the throat is grey instead of white.

Colours of soft parts. "Legs and feet fleshy-pink, light purplish brown, pale pinkish brown or pale reddish brown; bill black, hoary black or dark hoary brown; iris wood-brown, deep red-brown, light red or crimson" (*Hume and Davison*).

Measurements. Total length about 230 to 240 mm.; wing 97 to 102 mm.; tail about 106 mm.; tarsus about 18 mm.; culmen about 23 mm.

Distribution. Karenni and the hills of East Central Burma to Muleyit in Tenasserim.

Nidification. Unknown.

Habits. This race seems to be found in much the same kind of forest as that frequented by the last bird but it is also found in pine-forests, in which *H. m. macclellandi* does not seem to enter. It occurs from 2,500 up to 4,000 feet.

There is a form of *Hemixus macclellandi* found in the Kachin Hills (*Harington*) but I have not seen any specimens. Presumably it is typical *macclellandi* with which Harington placed it but it *may* be this Karen Hills form, *tickelli*, and specimens are badly wanted to confirm or disprove this.

(396) Hemixus macclellandi binghami.

HARTERT'S SHAN BULBUL.

Iole holti binghami Hartert, Vög. Pal., ix, p. 558 (1902) (Loi-San-Pa, S. Shan States).

Vernacular names. None recorded.

Description. This form differs from the Himalayan and Davison's Brown-eared Bulbuls in having the upper plumage brown, not green. It is nearest to *H. m. holti*, from Southern China, in its abdomen being paler and whitish rather than rusty rufous and in its paler upper parts.

Measurements. " Wing 108 mm.; tail 115 mm." (*Hartert*).

Distribution. South Shan States.

Nidification and Habits. Nothing recorded.

Within a comparatively small area we have many forms of this Bulbul—*H. m. holti* from S. China, *H. m. similis* Rothschild from Yunnan, *H. m. tickelli* from the Karen Hills, *H. m. macclellandi* from the Chin and Kachin Hills. Apparently these are all good forms. From Annam, Messrs. Robinson and Kloss describe yet another form as *H. tickelli griseiventer* (Ibis, 1919, p. 508).

Genus ALCURUS Hodgson, 1843.

The only species in this genus is a conspicuous and easily recognized bird with ample crest and striped plumage. The crest springs from every portion of the crown and is of considerable length when erected, the feathers being narrow but of the same width throughout and not sharply pointed. The bill is small and only half the length of the head; the tarsus is scutellated but in young birds is almost smooth throughout. The tail is slightly rounded and the wing rather pointed.

Fig. 76.—Head of *Alcurus striatus*.

(397) Alcurus striatus.

THE STRIATED GREEN BULBUL.

Trichophorus striatus Blyth, J. A. S. B., xi, p. 184 (1842) (Nepal).
Alcurus striatus. Blanf. & Oates, i, p. 266.

Vernacular names. *Senim-plek-pho* (Lepcha); *Chichiam* (Bhutea).

Description. Whole upper plumage and closed wings and tail olive-green, brownish on the crest, which in some specimens is almost a hair-brown; the feathers of the crown have white striæ which are broadest and often yellowish on the forehead, narrowest on the longer crest-feathers, where they become little more than shaft-stripes; nape, upper back and scapulars broadly striated white, the striations becoming narrower towards the rump and ceasing altogether on the upper tail-coverts; lores and chin yellow or orange-yellow; throat paler and duller yellow, the feathers tipped with dusky-brown; ear-coverts dark brown narrowly streaked with yellowish white; breast, sides of neck and flanks dark grey-brown broadly striated with yellow towards the abdomen, which is wholly of this colour; under tail-coverts yellow; under surface of the tail yellowish green; the greater wing-coverts are broadly margined with yellowish on the outer webs.

Colours of soft parts. Iris reddish brown to Indian-red or bright brick-red; bill dark horny, almost black; legs dark clear plumbeous, according to Davison sometimes dark brown.

Measurements. Length about 220 mm.; wing 102 to 112 mm.; tail 96 to 108 mm.; tarsus about 20 mm.; culmen about 15 to 16 mm.

Distribution. Himalayas, Nepal to Assam both North and South of the Brahmaputra, Chin Hills, Kachin Hills to Yunnan, Manipur and hills of Central Burma to Tenasserim.

Rothschild has recently shown that *Alcurus striatus paulus** described from Yunnan cannot stand as it is no smaller than those from Sikkim and elsewhere. The birds from Tenasserim possibly average 1 or 2 mm. less in wing measurement but the extremes are much the same, and as I can trace no difference in plumage there seems to be no sufficient ground for separating them. Birds of this species in abraded plumage differ from freshly plumaged birds far more than is generally the case and this must always be borne in mind when comparing specimens from different areas.

Nidification. The Striated Green Bulbul breeds between 4,000 and 8,000 feet, perhaps higher still, over the greater part of its known range, building a cup-shaped nest of roots and fine elastic twigs with a lining of fine grass stems. In some cases a few scraps of moss, spiders' egg-bags and a cobweb or two may be added but in all roots and twigs form the main materials. The site selected is a thick bush or clump of the small bamboo which grows in amongst other trees and scrub and in all cases the nests are very well hidden, generally 3 or 4 feet only from the ground.

The few eggs which have been found are of two types—the one like very exceptionally brown eggs of the Common Bengal Bulbul, the other with a white ground marked with numerous small freckles and blotches of pinkish red, more sparse towards the smaller end. They measure about 22·4 × 16·3 mm. It

* *Alcurus striatus paulus* Bangs & Phillips, Bull. Mus. Comp. Zool., lviii, p. 284.

appears to be a late breeder, no eggs having been taken earlier than June except one by Mandelli in May.

Habits. The Striated Green Bulbul is a bird of high elevations only, not descending below 4,000 feet even in the cold weather. Jerdon says that it keeps much to the tops of high trees but in N. Cachar we found it frequenting smaller trees and scrub-jungle. Here it was restlessly moving about from one bush to another and when disturbed made its way into safety by short flights of a few yards at a time, although they are good flyers when really forced to take wing into the open, with a faster, more direct flight than most Bulbuls. Their principal note is "a loud, mellow whistle," as referred to by Jerdon but they are really rather silent birds on the whole. They consort in small flocks in the non-breeding season and eat fruits, seeds and insects.

Genus **MOLPASTES** Hume, 1873.

The genus *Molpastes* comprises some Bulbuls which are amongst the most familiar of Indian and Burmese garden birds. They are very widely distributed and though there are but few species these are represented by very numerous geographical races.

In *Molpastes* the crest is thick and of considerable length, the feathers growing from every portion of the crown and nape. The nuchal hairs are extremely short and difficult to detect. The wing is blunt and the tail very slightly rounded. All the birds of this genus are remarkable for the bright colour of the under tail-coverts and are further to be recognized by the broad white tips to the tail-feathers.

Fig. 77.—Head of *M. l. humii.*

One of the species or races hitherto recognized cannot be maintained. This is *Molpastes magrathi* (Whitehead, Bull. B. O. C., xxi, p. 48) which is only a rather common hybrid between *M. h. intermedius* and *M. leucotis*, partaking of the characters of these two birds in varying degree, some individuals showing more of the former and some more of the latter.

The question of the status of the Chinese birds *chrysorrhoides* is one of some doubt. Robinson and Kloss consider that there are two good species, *chrysorrhoides* and *hæmorrhous*, both containing one or more races. To me it seems that we have but one species, extending from Ceylon to China, for there is no real break in the continuity of gradation from the dark western forms

with black ear-coverts to the pale eastern forms with almost white ear-coverts. At the same time, all along the joining line of *Molpastes h. burmanicus*, *M. h. nigripileus* and *M. h. bengalensis* on the West with *M. h. chrysorrhoides* on the East we have not only many intermediate birds, which might equally well be assigned to either form, but there are many birds, the majority in fact, which can quite definitely be credited to one or the other. Thus there are in the British Museum Collection specimens from the Shan States, Yunnan, Siam, Karenni, Tenasserim, etc., some of which are labelled *chrysorrhoides*, some *nigripileus*, some *atricapillus* and some *klossi* but of the birds so labelled there are many of which it is impossible to say to which race they belong. Davison, Armstrong and others obtained birds at the same place about the same date which they had no difficulty in calling *chrysorrhoides* or *nigripileus*, yet others again are referable to either. It appears to me that all along the Siam–Burmese boundaries there is a narrow region in which there is no stable form found and where, evidently, there are such conflicting conditions in the environment that Nature has not yet had time to evolve one definite form. It is, of course, true that in all lines of demarcation between geographical races intermediate forms are the rule but in this intervening territory intermediate individuals are less common than such as can be definitely assigned to one or the other of the races in the adjoining area.

In view of the many individuals which are exactly half-way between *chrysorrhoides* and their next-door neighbours, I propose in this work to treat all the forms as geographical races of *hæmorrhous*.

Molpastes chrysorrhoides klossi Robinson, Bull. B.O.C., xli, p. 12 (1921) does not seem to be maintainable; the Museum series varies in wing measurements between 87 and 104 mm., whilst the very large series of Chinese birds range from 90 to 107 mm., one huge bird from Amoy having a wing of 111 mm. On the other hand, it is quite possible that the birds of West Siam may be separable as somewhat smaller and darker on an average. The series in the British Museum from that country is insufficient to determine this point.

Key to Species and Subspecies.

A. Under tail-coverts red.
- *a*. The black of crown sharply defined and not extending to the hind-neck.
  - *a'*. Ear-coverts black and not distinguishable from the crown.
    - *a''*. Back dark brown, feathers narrowly edged with white. . . . *M. hæmorrhous hæmorrhous*, [p. 383.
    - *b''*. Back paler brown, feathers broadly edged with white . . . *M. h. pallidus*, p. 385.
  - *b'*. Ear-coverts brown, contrasting with black of crown.

c′. Chin, throat and upper breast deep black........	*M. h. burmanicus*, p. 385.
d″. Chin and upper throat only black	*M. h. nigripileus*, p. 386.
c′. Ear-coverts whitish like the lower plumage; point of chin only black	*M. h. chrysorrhoides*, p. 387.
b. Black of crown extending into hind-neck and back and not sharply defined from brown of latter.	
d′. Black extending far on to back and breast	*M. h. bengalensis*, p. 387.
e′. Black extending only on to hind-neck and shading into brown on breast	*M. h. intermedius*, p. 389.
A. Under tail-coverts yellow.	
c. Forehead and long crest hair-brown, each feather edged with greyish white	*M. leucogenys leucogenys*, [p. 389.
d. Forehead and crown black; no crest	*M. l. leucotis*, p. 390.
e. Forehead and crown with short full crest black	*M. l. humii*, p. 391.

(398) Molpastes hæmorrhous hæmorrhous.

THE CEYLON RED-VENTED BULBUL.

Muscicapa hæmorrhous Gmel., S. N., i, p. 941 (1789) (Ceylon).
Molpastes hæmorrhous. Blanf. & Oates, i, p. 268.

Vernacular names. *Bulbul* or *Bulbuli* (Hind.); *Pigli-pitta* (Tel.); *Konda-lati* (Tam.).

Description. The whole head, chin and throat deep black, sharply defined at the back of the head; neck, back, wing-coverts, scapulars and breast brown, each feather narrowly margined with whitish; rump plain brown; upper tail-coverts white; tail brown at base, darkening and becoming black towards the end, tipped white; wing-quills brown, very narrowly margined with whitish; sides of body and flanks brown fading to almost white on abdomen; under tail-coverts crimson; shafts of tail-feathers whitish beneath.

Colours of soft parts. Iris hazel to dark brown; bill black; legs and feet dark brown to black.

Measurements. Total length about 200 mm.; wing 85 to 95 mm.; tarsus about 21 mm.; culmen about 15 mm.

Distribution. Ceylon and South India, Travancore and Mysore. North about up to 18° on the East and to about 20° on the West.

Nidification. This Bulbul breeds over the whole of its area in the plains and the foot-hills of the various ranges up to about 2,000 feet, ascending much higher than this in any hills where big towns, cultivation and big open plains have usurped the place of jungles and forests. In Ceylon they are commonly found up to

3,000 feet and on the Nilgiri Hills up to about 8,000 feet above Ootacamund. They breed in Ceylon principally in March and April but eggs may be taken in almost any month; in India May and June are, perhaps, the favourite months but there also the breeding season is very extended, many second broods are hatched and there is practically no season in which an odd nest or two may not be seen. The nest is a cup made of dead leaves, grass, twigs, creeper stems and odd scraps of dried moss, lichen etc., fairly compactly put together but rather untidy. The lining is of fine roots and green stems. No nests are ever taken in forest or really heavy jungle and no nest is built very high up in big trees or, on the other hand, placed quite on the ground. Within these limits, however, they may be built in almost any situation. A shrub or small tree within a few feet of a frequented path, a trellis over a verandah, a bush in scrub surrounding a village, a thick patch of high grass in an orchard—all in turn may serve the purpose and, failing these, any other kind of bush, tree or stump will suffice. The number of eggs laid is two or three but in the north a clutch of four may occasionally be seen. In ground-colour the eggs vary from pure white to a pale or deep salmon-pink, a few having rather a lilac tint. Normally the markings consist of numerous small blotches, spots and freckles of various shades of red, reddish brown or pinkish brown with others, less numerous, underlying them of pale neutral tint and grey. In a few eggs the marks may be mere freckles or stipplings, in others again somewhat bolder and more blotchy but the range of variation does not seem as great as it is in *M. h. bengalensis* and *M. h. burmanicus*. In texture the eggs are smooth but not very fine grained, there is little or no gloss and they are rather fragile for their size. 100 eggs average 21·1 × 15·5 mm. and vary in length between 24·3 × 16·5 and 19·0 × 15·1 mm. and in breadth between 20·2 × 16·9 and 21·4 × 15 mm.

Habits. The various races of Red-vented Bulbuls are amongst the most common birds of India, sharing with the Myna, the Crow and the Kite an attachment to the vicinity of civilization and the haunts of man. They are not gregarious in the true sense of the word but they are so plentiful that in any spot which offers any inducements in the way of food large numbers may be seen feeding together. They feed on almost any kind of fruit, seed or insect and are often most destructive, picking off oranges when about the size of a pill, destroying peas in the hill gardens and also pulling to pieces young shoots and buds. They are rather quarrelsome and extremely plucky and the natives in many parts of India keep them for fighting purposes and the males will sometimes fight to the death unless parted. Their voice cannot be called beautiful but many of the notes are pleasant and they are extremely cheerful birds, always in an optimistic frame of mind and any garden is the richer for their lively, restless presence and constant gay notes. Their flight is quick and strong.

(399) Molpastes hæmorrhous pallidus.

THE CENTRAL INDIAN RED-VENTED BULBUL.

Molpastes hæmorrhous pallidus Stuart Baker, Bull. B. O. C., xxxvii, p. 15 (1917) (Deesa).

Vernacular names. *Bulbul* and *Bulbuli* (Hind.); *Tonki-Bulbul* (Western Bengal).

Description. This bird only differs from typical *hæmorrhous* in being paler both above and below and having much broader white or greyish-white edges to the feathers, these greatly increasing the general paleness of the whole plumage.

Colours of soft parts as in the last bird.

Measurements. Much the same as in the Ceylon Red-vented Bulbul; wing about 87 to 97 mm.

Distribution. Continental India roughly North of a line running from 18° on the East to about 20° on the West. It is found as far North as Behar and Western Bengal on the East and through Bundelkhand and the Rewah States to the southern portions of Rajputana, Cutch and Kathiawar.

Nidification in no way different to that of the last bird except that clutches of four eggs are not uncommon in the north-east of the range, whilst clutches of two are exceptional anywhere but in the south-west. Forty eggs average 22·3 × 16·1 mm., the extremes being practically the same as in the preceding subspecies.

Habits. Those of the genus.

(400) Molpastes hæmorrhous burmanicus.

THE BURMESE RED-VENTED BULBUL.

Molpastes burmanicus Sharpe, Cat. B. M., vi, p. 125 (1881) (Pegu); Blanf. & Oates, i, p. 269.

Vernacular names. *Popin-ni-ta*, *Bopin-ni* (Burmese); *Boh-ka-lone* (Burmese for all Bulbuls).

Description. Differs from the last two in having the ear-coverts glossy hair-brown. The black of the crown is sharply defined from the brown back as in these birds but the black below extends to well on to the breast.

Colours of soft parts. Those of the genus; the legs are more completely black.

Measurements. Wing about 91 to 106 mm. Birds from the extreme south average a little smaller than those from the north.

Distribution. Manipur, Chin Hills, Arrakan South to Rangoon and East to the Sittang River.

As Oates observes, it is not easy to define the limits of this race but no specimens ever occur North of the Brahmaputra. In

Manipur it may be said to be the constant form as it is in Lushai; in the Eastern Cachar Hills birds are nearer this form than *bengalensis* but in Western Cachar and the Khasia Hills the Bengal bird is the normal one, though some few approach the Burmese birds. This is, however, only what we expect to find in geographical races and on the dividing lines between all the races of this Bulbul the birds inhabiting them will themselves be more or less intermediate.

Nidification. Similar to that of the birds already described but the nest is often placed in bushes on the outskirts of forest and sometimes even inside light forest, bamboo- or scrub-jungle. It is not so persistent an adherent to civilization and though it prefers the vicinity of towns and villages, will often be found in open country some distance from them. 100 eggs average 22·0 × 16·2 mm. and the extremes are **23·8** × 16·7; 22·2 × **17·5** and **20 5** × 15·5; 21·2 × **15·0** mm.

In the northern portion of its habitat four is the normal clutch for this bird, further south three only, whilst round about Rangoon it often lays but two. The breeding season lasts from April to July, earlier in the south, later still in the north.

(401) Molpastes hæmorrhous nigripileus.

THE TENASSERIM RED-VENTED BULBUL.

Pycnonotus nigripileus Blyth, J. A. S. B., xvi, p. 472 (1847) (Tenasserim).
Molpastes nigripileus. Blanf. & Oates, i, p. 270.

Vernacular names. *Boh-ka-lone* (Burmese).

Colours of soft parts as usual. Legs and feet black.

Measurements. Wing about 85 to 99 mm.

Distribution. Burma, East of the Sittang River, as far South as Tenasserim and North to Karenni. The range of this bird and that of the next has been very much confused. It appears that the whole of the South Burmese race East of the Sittang and Peninsular Siam must be placed under the name *nigripileus*. Oates in allowing two races to occur in the same area has been misled by the fact that here and there among birds from North-East Tenasserim one meets with individuals which have rather light ear-coverts, thus showing some approach to the next race.

Nidification. Darling found a nest of this bird containing three eggs on the 16th March in Tenasserim. This is recorded as that of the Chinese Red-vented Bulbul. Nest and eggs are in no way distinguishable from those of others of the genus. The few eggs I have seen average about 24·1 × 17·0 mm. but a larger series would assuredly decrease these figures.

Habits. This bird is said to be even more of a forest and jungle bird than the last, otherwise there is nothing to note about it.

(402) Molpastes hæmorrhous chrysorrhoides.*

THE CHINESE RED-VENTED BULBUL.

Hæmatornis chrysorrhoides Lafr., Rev. Zool., p. 367 (1845) (China).
Molpastes atricapillus. Blanf. & Oates, i, p. 270.

Vernacular names. *Kator-tor-mang* (Kachin): *Ko-kai-kwun* (Chinese).

Description. This form is distinguished from all others by its almost white ear-coverts; the general plumage is paler and the black of the lower parts confined to the chin. The black of the crown is sharply defined from the rather pale brown hind neck and back.

Colours of soft parts as usual.

Measurements. Wing about 85 to 111 mm. Chinese birds vary between 90 and 111 mm. and two very doubtful birds from Tenasserim have wings of only 87 mm.

Distribution. From the North of Karenni through the Kachin Hills, Shan States and Yunnan to South-West China. Birds from North and Central Siam are also of this race. Birds from South-West Siam and East Tenasserim are doubtfully referable to this race.

Nidification. The nest and eggs are described as similar to those of the Bengal bird and a series of the latter obtained by Staff-Surgeon Jones at Hongkong might stand almost equally well for any of the other races. They average 21·8 × 16·7 mm.; the longest and shortest are 22·9 × 17·3 and 20·6 × 16·4 mm.; the longest is also the broadest, and the most narrow is 21·5 × 16·1 mm.

Staff-Surgeon Jones says that the eggs number from two to six in a clutch and that the nest is often placed in a fir-tree at a considerable height from the ground.

Habits. The Chinese Red-vented Bulbul is the same familar bird in China and the Burmo-Chinese countries that the Indian Red-vented Bulbul is in India but over a great part of its range it is a bird of the semi-jungle and forest land as well as of villages and towns. Otherwise in all its habits it differs in no way from the other geographical races.

(403) Molpastes hæmorrhous bengalensis.

THE BENGAL RED-VENTED BULBUL.

Molpastes bengalensis Blyth, J. A. S. B., xiv, p. 566 (1845) (Bengal); Blanf. & Oates, i, p. 271.

Vernacular names. *Bulbul*, *Bulbulli* (Hind.); *Kala Bulbul* (Beng.); *Bulbul-sorai* (Assam); *Dao-bullip* (Cachari): *Inrui bullip* (Naga): *Paklom* (Bhut.); *Mancleph-pho* (Lepcha).

---

* *Muscicapa atricapilla* of Vieill., Nouv. Dict. d'Hist. Nat., xxi, p. 489 (1818) is preoccupied by Linné, 1768, and cannot be used.

Description. Differs from *M. h. hæmorrhous* in having the black of the head gradually shading into the blackish brown of the lower back and the lower breast. The ear-coverts are dark chocolate-brown and the whole plumage is much darker than in *M. h. hæmorrhous* and *a fortiori* than that of *M. h. pallidus.*

Colours of soft parts. Iris hazel or dark brown; bill and legs black, the latter rarely with a brownish tinge.

Measurements. This is the largest of the Indian races and larger than any of the other races except *chrysorrhoides.* Wing 103 to 111 mm.

Distribution. The Himalayas and Sub-Himalayan terai and adjoining plains from Kumaon to East Assam; Oudh, Northern Behar; East Bengal from about Chota Nagpur; Khasia Hills and Naga Hills East to Lakhimpur; N.W. Cachar. In Manipur and in East Cachar the common type is *burmanicus*, though here, as one would expect, many birds are half-way between the two. In Central Cachar the birds are quite intermediate but here and there, even as far West as the Khasia Hills, birds of the Burmese type are not uncommon.

Nidification. The Bengal Red-vented Bulbul breeds freely throughout its range from the level of the plains to at least 7,000 feet. In the plains it begins in March and continues until May, many birds having a second brood after the rains break in June and July. In the hills May seems to be the great breeding month but eggs have been taken in practically every month of the year. The nest is the usual cup-shaped affair made by all Bulbuls but is possibly rather bigger and bulkier than those made by its more southern cousins. It is placed in bushes or trees in gardens, roadsides, orchards etc. and also in the scrub round villages. In the Khasia and Cachar Hills it also breeds in thin jungle and the extreme outskirts of forest.

The normal full clutch is three or four eggs and rarely even five may be laid. Typically they are rather broad obtuse ovals but they vary considerably in shape. In colour again typical eggs are white to strong pink or lilac-pink profusely spotted, speckled and blotched with various shades of brown or reddish brown with sparser secondary markings of pale lavender and neutral tint. They, however, vary enormously and many eggs are extremely richly and handsomely marked, whilst others are not. 200 eggs average 22·9 × 16·9 mm. and the extremes are **25·0** × 17·0; 24·0 × **17·5** and **20·9** × 17·5; 21·8 × **15·3** mm.

Habits. The Bengal Red-vented Bulbul is not gregarious in the true sense of the word but it is so common that it will be seen in numbers wherever the country is at all suitable and there is no garden of any size which does not have several resident pairs as well as innumerable casual visitors. They are charming and sprightly birds in their ways and actions and most of their notes are very pleasant. Like many other Bulbuls they are very pugnacious and during the breeding season no other Bulbul is allowed within the

immediate vicinity of the nest, though there may be nests of other genera within a very few feet of it. They get extraordinarily tame and I have frequently had pairs of wild birds, with nests in my garden, who would take white ants from within a few inches of my fingers and who never thought of leaving their nests when I took tit-bits of food to them or their chicks.

(404) Molpastes hæmorrhous intermedius.

THE PUNJAB RED-VENTED BULBUL.

Pycnonotus intermedius Jerdon, B. of I., ii, p. 95 (1867) (Murree).
Molpastes intermedius. Blanf. & Oates, i, p. 272.

Vernacular names. *Kala painja* (Chamba).

Description. Only differs from the last race in having the black of the head not extending to the back or upper breast. The ear-coverts are chocolate-brown as in the Bengal bird but the general appearance is decidedly paler.

Measurements. Wing 92 to 105 mm. It is a decidedly smaller bird than *bengalensis*, very few birds having the wing as much as 100 mm.

Distribution. The lower ranges of the Himalayas from the extreme North-West to about Murree, the Simla Hills, Kashmir and the North of the Punjab. Birds from Western Oudh and West Bengal are intermediate between this and the last race.

Nidification. Similar to that of the last race but it lays three eggs more often than four and the eggs themselves do not seem to go through nearly as wide a variation. The birds breed from May to July at all heights up to about 5,000 feet or higher. Forty eggs average 22·2 × 16·3 mm.

Habits similar to those of *M. h. bengalensis*.

(405) Molpastes leucogenys leucogenys.

THE WHITE-CHEEKED BULBUL.

Brachypus leucogenys Gray, Hardw. Ill. Ind. Zool., ii, p. 35 (1830) (Darjiling).
Molpastes leucogenys. Blanf. & Oates, i, p. 272.

Vernacular names. *Manglio-kur* or *Mankliph-kur* (Lepcha); *Kundghara* (Beng.); *Painju* (Chamba).

Description. Forehead and crest hair-brown, each feather narrowly edged with greyish white; lores black, with a white line above them; cheeks, round the eye, chin and throat black; ear-coverts white, with a black patch behind them and another patch below them striped white and brown; upper plumage olive-brown, the hinder part and sides of the neck barred with blackish, and the centres of the feathers brown; wings brown, the feathers edged with olive-brown; tail brown on the basal half, black on the terminal half and all the feathers except the two middle ones tipped

with white; lower plumage pale earthy-brown, whitish on the abdomen; lower tail-coverts bright sulphur-yellow; edge of wing white.

Colours of soft parts. Iris brown or hazel; bill black; legs and feet brown to blackish brown, occasionally with a plumbeous shade.

Measurements. Length about 200 mm.; wing 80 to 93 mm.; tail about 85 mm.; tarsus about 20 mm.; culmen about 14 to 16 mm.

Distribution. The Himalayas from Afghanistan and the extreme North-West to Bhutan and the hills of Assam, North of the Brahmaputra as far East as the Dihang River, whence I have had specimens sent me for identification.

Nidification. The White-cheeked Bulbul breeds from May to July at all heights from 2,500 to 7,000 feet, making a nest very similar to that of the Red-vented birds but generally less solid and well-built and decidedly smaller. It is made of the usual materials, grass, leaves, fine twigs and stems of plants mixed with odd scraps of moss, lichen and roots and lined either with fine roots or grass. It is placed low down in a bush or small tree, seldom more than 5 or 6 feet above the ground and sometimes within a foot of it. The site selected may be either in a garden or a compound or in light jungle and low scrub.

The eggs are similar to those of the last species but, perhaps, average longer in shape and duller in tint and markings. 100 average 21·6 × 16·1 mm. and the extremes in length and breadth are **24·6** × 16·8, 24·0 × **18·0** and **19·0** × **15·2** mm. The full clutch is either three or four eggs, more often the former.

Habits. Though found constantly wherever there are villages and cultivation, this Bulbul is occasionally found haunting nullahs and ravines which are comparatively well-wooded. This is especially the case round about Mussoorie. It is found at all heights from 2,500 up to 7,500 feet and even higher than this near Simla, where Mr. P. Dodsworth took many nests.

Fig. 78.—Head of *M. l. leucotis*.

(406) Molpastes leucogenys leucotis.

The White-eared Bulbul.

Ixos leucotis Gould, P. Z. S., 1836, p. 6 (India orientali) (restricted to Punjab).
Molpastes leucotis. Blanf. & Oates, i, p. 273.

Vernacular names. *Kangdhara* (Beng.); *Kushandra* or *Kunshanbra* (Punjab); *Bhooroo* (Sind).

This bird is a black-headed crestless form of the last bird; the general colour above is also decidedly paler.

Colours of soft parts. Iris brown; bill and legs black.

Measurements. Just about the same size as the White-cheeked Bulbul, the wing running from 86 to 93 mm.; the bill, however, is much smaller than in either the preceding or the following bird, measuring only about 12 to 13 mm. In shape it is rather stout and blunt instead of slender as in *leucogenys* or very stout and heavy as in *humii*.

Distribution. Sind; Cutch; Guzerat; Rajputana; Punjab; the N.W. Provinces South to Etawa and Central India as far East as Jhansi, Saugor and Hoshangabad.

Nidification. This differs in no way from that of the White-cheeked Bulbul but the eggs average about 21·0 × 15·9 mm.

Habits. This bird is merely a plains form of *M. l. leucogenys*, which is a hill Bulbul. It is also more exclusively a bird of civilization, breeding round about villages, gardens and orchards and frequenting lightly-wooded and cultivated country rather than those parts where the woods are at all extensive.

(407) Molpastes leucogenys humii.

Hume's White-eared Bulbul.

Molpastes humii Oates, Fauna B. I., Birds, i, p. 274 (Jalalpur, Jhelum).

Vernacular names. Not distinguished from the last.

Description. Differs from the White-eared Bulbul in having a short, full crest and in having both forehead and crest practically black, with only very faint pale edgings. There is no white eyebrow; the upper plumage is a grey-brown, with no trace of the olive tinge so often present in *M. l. leucogenys*.

Colours of soft parts as in *leucogenys* but the bill is always deep black.

Measurements as in the other races but the culmen measures about 15 mm. and is blunt and very stout and heavy. The wing varies from 82 to 93 mm.

Distribution. Oates named this bird from a specimen in the British Museum series which he said differed from all the rest, but a more careful examination shows that in this series there are about twenty other specimens in every respect identical with the type. These birds are all from a small area in the country round Jhelum, Attock, Bannu and Kohat, on the extreme N.W. Frontier.

Nidification. Similar to that of the other subspecies.

Habits. This appears to be a bird of the lower hills of the N.W. Frontier intermediate between the range of *M. l. leucogenys* on the higher hills and *M. l. leucotis* in the better-wooded plains. It is a resident bird, of course, frequenting and breeding in the gardens and in the scanty vegetation and hedges round about cultivated areas.

Genus XANTHIXUS Oates, 1889.

This genus was created by Oates for the reception of *Xanthixus flavescens*, a species differing from all its nearest allies in having the tail-feathers strongly graduated. The outermost tail-feather falls short of the longest by a distance equal in length to the tarsus; the crest resembles that of *Hemixus flavala* and the wing that of *Molpastes*.

There is only one species, which I divided into two races in 1917, one of which was again renamed by Kloss in 1919 on the grounds that I had renamed the original race from Arrakan instead of the new race. I have again compared the fine series in the British Museum and find that my original distribution is quite correct. Kloss's name *sordidus* therefore becomes a synonym of my *viridus*. The types of *flavescens* from Arrakan, which are in the Indian Museum and were inspected by Kloss, are probably discoloured by age, as fresh specimens from Arrakan and the Chin Hills show beyond all doubt that they belong to the same form as that from Assam and not to the more yellow form from Eastern Burma.

Kloss's birds from Annam may quite possibly be yet another form, though I cannot distinguish any differences, in which case they would retain the name *sordidus*.

Xanthixus flavescens.

Key to Subspecies.

A. Below paler, grey of abdomen slightly suffused with yellow not extending to breast ...... *X. flavescens flavescens*, p. 392.
B. Below darker on breast and flanks and yellow extending to breast or even to throat ...... *X. fl. viridus*, p. 393.

(408) Xanthixus flavescens flavescens.

BLYTH'S BULBUL.

Pycnonotus flavescens Blyth, J. A. S. B., xiv, p. 568 (1845) (Arrakan).
Xanthixus flavescens. Blanf. & Oates, i, p. 275.

Vernacular names. *Dao bulip-gurrmo* (Cachari).

Description. Forehead and crown dark brown, the feathers of the front half of the crown edged with grey, those of the hinder half with olive-green; upper plumage olive-brown tinged with flavescent on the rump; wings olive-brown; edges of quill-feathers olive-green; tail olive-brown, shafts rather darker brown, the three outer pairs of tail-feathers faintly tipped with yellowish white; lores black; a short supercilium from base of upper mandible yellowish white; cheeks and ear-coverts greenish grey; chin pale grey; throat, breast and flanks grey, slightly suffused with yellow on the lower breast; abdomen dull yellowish; vent and under tail-coverts bright yellow; edge of wing and under wing-coverts fulvous yellow.

Colours of soft parts. Iris dark brown; bill, legs and feet black.

Measurements. Total length about 205 mm.; wing 81 to 87 mm.; tail about 100 mm.; tarsus about 20 mm.; culmen about 10 mm.

Distribution. Assam, South of the Brahmaputra as far East as the Naga Hills, Manipur, Lushai, Chin Hills and Arrakan.

Nidification. In Assam and the Chin Hills Blyth's Bulbul breeds between 3,500 and 7,000 feet in April, May and June, but nests and birds sent me from the Arrakan Yomas were taken at about 3,000 feet in February and March.

They are forest birds, their nests being generally placed in quite low bushes and carefully concealed and as the bird slips out very silently when disturbed, the nests are hard to find. In shape they are shallow cups very neatly made of grass, fine twigs, weed stems, an odd leaf, scraps of moss or lichen and a few coarse roots. The lining is nearly always the flowering end of a coarse grass, bright tan in colour. The bush selected is always one in forest or thick scrub, the rare exceptions being in mixed scrub- and bamboo-jungle.

They lay either two or three eggs, most often the former. These are typical Bulbul's eggs but very finely freckled or stippled instead of blotched, and, whilst the markings are generally very profuse everywhere, they are often much paler and pinker than they are in *Molpastes*. There are sometimes about the larger end a few short lines of darker reddish brown or purplish black. In shape they are long, rather blunt ovals with fragile, glossless shells. 100 eggs average 23·8 × 16·4 mm., the greatest and least lengths being **26·8** × 17·4 and **18·7** × 15·2 mm. and the broadest and most narrow 26·8 × **17·4** and 21·8 × **15·0** mm. respectively.

Habits. Blyth's Bulbul may rarely be found in valleys of the higher ranges as low down as 1,500 feet but normally they are birds of the higher hills between 3,500 and 7,500 feet. In winter they frequent more open country, such as patches of cultivation, light forest, bamboo- and scrub-jungle round cultivation, open glades and light forest near streams and tracks but in the breeding season they retire to the deeper forests. They may be found in flocks of anything from half-a-dozen to over thirty and resent other birds feeding with or near them, often quarrelling even amongst themselves over food and other matters of interest. They are not noisy birds and seem to have no song, most of their conversational notes being much like those of the last genus. They feed on both insects and fruit and frequent bushes, low trees and high trees alike in their quest for them.

(409) Xanthixus flavescens vividus.

The Muleyit Bulbul.

Xanthixus flavescens vividus (misprint *vivida*) Stuart Baker, Bull. B. O. C., xxxviii, p. 16 (1917) (Muleyit Mt.).

Vernacular names. *Cheng-ma-kator* (Kachin).

Description. Differs from the last bird in being darker, especially in the grey of the breast and the yellow, which is confined to the lower breast in *flavescens*, extends well on to the upper breast and even to the throat. In tint also, perhaps in contrast with the darker grey, it is brighter and more vivid.

Colours of soft parts. The legs are more tinged with brown than in the last bird.

Measurements. Wing measurements 80 to 89 mm. (79 Kloss, Annam).

Distribution. Kachin Hills, Shan States, Karenni and S.E. Burma into the Malay States.

Nidification differs in no way from that of the last bird. In the Kachin Hills it breeds between 4,000 and 6,000 feet in forests, generally on the outskirts. Ten eggs measure about 23·1 × 16·0 mm. Hopwood and Grant took its eggs in March, April and May.

Habits. Those of the last bird.

Genus **OTOCOMPSA** Cabanis, 1851.

The Bulbuls of this genus are very close indeed to *Molpastes* but the feathers forming the crest spring from the centre of the crown, the feathers of the hind crown being short and of the usual character. In our Indian forms the crest is very long but in the Burmese forms less conspicuously so and in *O. flaviventris johnstoni* from East Siam it is quite short.

From the next genus, *Pinarocichla*, it is easily distinguished by its soft plumage on the lower back and rump.

Key to Species and Subspecies.

A. Upper plumage brown, no green or yellow in plumage.
- *a.* Upper plumage a rich ruddy-brown .... *O. emeria emeria*, p. 394.
- *b.* Upper plumage dull brown.
  - *a'.* Tail-feathers with no white tips .... *O. e. fuscicaudata*, p. 396.
  - *b'.* Tail-feathers with white tips ...... *O. e. peguensis*, p. 396.

B. Plumage nearly all green and yellow except head.
- *c.* Larger, wing average about 85 mm. .... *O. flaviventris flaviventris*, [p. 397.
- *d.* Smaller, wing average about 81 mm..... *O. fl. minor*, p. 398.

(410) Otocompsa emeria emeria.

The Bengal Red-whiskered Bulbul.

Lanius emeria Linn., S. N., i, p. 137 (1766) (Bengal).
Otocompsa emeria. Blanf. & Oates, i, p. 276.

Vernacular names. *Kamera Bulbul* (Hind.); *Kara Bulbul* and *Sipahi Bulbul* (Beng.); *Dao-bullip gajao-bi* (Cachari); *Inrui bullip-gahérba* (Kacha Naga); *Boh-ka-lone* (Burmese). *Ko-kai-kwan* (Chinese).

Description. Forehead, crown and lores black; hinder parts of cheeks and ear-coverts white surrounded with black; a tuft of crimson-scarlet feathers under the eye and extending over the lower ear-coverts; whole upper plumage, wings and tail ruddy-brown, the feathers of the wing margined paler and the tail having all but the central, or two central, pairs tipped with fulvous-white, purest on the outermost feathers; lower plumage white, pure on the chin and throat and suffused with fulvous-brown on the flanks and thighs; a broad band across the breast dark brown, more or less broken in the centre; under tail-coverts crimson.

Colours of soft parts. Iris hazel-brown or crimson-brown; bill, legs and feet black.

Measurements. Total length about 200 mm.; wing 88 to 95 mm.; tail 80 to 85 mm.; tarsus about 20 mm.; culmen about 14 mm.

The nestling has no red ear-tufts and the under tail-coverts are pink.

Distribution. Himalayas, Simla to East Assam, North and South of the Brahmaputra, Bengal, Oudh, North of Orissa; North Chin and Kachin Hills, North Yunnan. The birds from China are very doubtfully separable but if separated would be known as *O. emeria jocosa*.

Nidification. This Bulbul breeds from early March to late September but most birds build in April, May and June. They are found during the breeding season from the level of the plains up to at least 7,000 feet, perhaps up to 8,000. They make a compact, cup-shaped nest of twigs, roots, bents, leaves and grasses, lined with fine roots or grasses. Generally it is placed on low shrubs but sometimes in small trees, cactus hedges or trellises of verandahs. I once found a nest in a grass field quite on the ground amongst the roots of the grass. They are birds of civilization, selecting gardens and cultivation for their abodes and even when they breed away from human haunts they select the thinnest scrub or fringes of heavier forest. Their eggs number three or four and are like those of the genus *Molpastes* but rather less variable. 200 eggs average 22·2 × 16·2 mm., the extremes being **24·1** × 16·0, 23·0 × **17·1**, **19·0** × 16·0 and 21·1 × **13·0** mm.

Habits. The Red-whiskered Bulbul is just as familiar and friendly a little bird as his Red-vented cousin and is even more cheerful and lively in his actions. They are less quarrelsome than the birds of the previous genus but are equally good fighters when roused, the males fighting fiercely in the breeding season if their special ground is invaded. Their notes are much the same as those of *Molpastes* but much more musical. They fly well, though at no great rate. Their diet is both insectivorous and vegetarian and they can do a good deal of mischief in fruit and vegetable gardens, destroying oranges, plums etc. when only just formed and raspberries, strawberries etc. when ripe.

(411) Otocompsa emeria fuscicaudata.

THE SOUTHERN RED-WHISKERED BULBUL.

Otocompsa fuscicaudata Gould, P. Z. S., 1865, p. 664 (Madras); Blanf. & Oates, i, p. 277.

Vernacular names. *Phari-bulbul* (Hind.); *Turaka pigli-pitta* (Tel.); *Konda-Kloti-Kurari* (Travancore).

Description. Differs from the Bengal bird in being much duller brown above, in having the necklace complete on the breast or only very slightly interrupted and in having no white tips to the tail-feathers.

Colours of soft parts. Iris brown; bill, legs and feet black.

Measurements. A rather smaller bird than the northern; wing 83 to 90 mm. and other measurements in proportion.

Distribution. South India, meeting the last form in South Orissa and Western Bengal; the whole of the Western Ghats to Rajputana and in Central India to the Central Provinces and Behar.

Nidification. Similar to that of *O. e. emeria* but it lays only two or three eggs in a clutch and more often two than three. Fifty eggs average 22·3 × 16·1 mm. and the extremes are 24·6 × 16·4, 22·6 × 18·0 and 19·9 × 15·0 mm. They are like those of the last bird, but vary even less than they do. The breeding season is chiefly in March and April but many nests may be found from February to August and odd ones in almost any month of the year. They breed up to at least 7,000 feet and are more entirely restricted to gardens and cultivation than the Bengal bird. They are extremely confiding and frequently breed in creepers on verandahs and house walls.

Habits. The Southern Red-whiskered Bulbul is in the South the same as its Bengal cousin is in the North. Cheerful, energetic, confiding and ubiquitous, it is almost as common as the Sparrow at home in England and infinitely more pleasing.

(412) Otocompsa emeria peguensis, subsp. nov.

THE BURMESE RED-WHISKERED BULBUL.

Vernacular names. *Boh-ka-lone* (Burmese).

Description. Similar to the Southern Red-whiskered Bulbul but with broad fulvous-white tips to the tail-feathers as in *emeria*. In *O. e. fuscicaudata* the brown of the back is perhaps not quite so dull as it is in this form, a faint tinge of ochre-red showing in some lights.

Colours of soft parts. Iris hazel; legs, feet and bill black.

Measurements. This is the smallest of the three races; wing 75 to 85 mm., in one case 88 mm.; tail 77 to 81 mm.

Distribution. South Chin Hills and South Kachin Hills to Tenasserim, Arrakan and the whole of the Central Hills of Burma, Siam and Shan States. Andamans and Nicobars.

This form is another of the interesting cases in which birds from the two extremities of a range are nearer than they are to those in the centre. In India we have a horseshoe of which Assam and the Chin Hills may be said to form the centre, whilst Ceylon and the Malay Peninsula form the two extremities. Evolution has evidently gone on on similar lines with very similar results in the two latter places, though we need not infer from this that these extremities were ever linked together.

Nidification. Though there is little on record in regard to this form, its nests and eggs, habits of breeding, etc. seem to differ in no way from those of the Indian birds. In the South it lays two or three eggs, in the North three and more rarely four. A large series sent me by one of my collectors from Pegu are exactly like a series from Madras and measure on an average for forty eggs 20·0 × 15·9 mm.

The breeding season seems to be February to April but doubtless extends over a much longer period than this.

Habits. Takes the place in Burmese gardens, villages and towns of *O. e. emeria* in Northern India etc. and of the Madras bird in Southern India. It is not found in forest or any kind of heavy jungle.

(413) Otocompsa flaviventris flaviventris.

The Black-crested Yellow Bulbul.

Vanga flaviventris Tick., J. A. S. B., ii, p. 573 (1833) (Dholbhum).
Otocompsa flaviventris. Blanf. & Oates, i, p. 278.

Vernacular names. *Pahariya kangdhara* (Gorakpur); *Mandiph-hur* (Lepcha); *Hagrani Dao-bulip* (Cachari).

Description. Head, with long crest, chin and throat glossy black; upper plumage and wing-coverts olive-yellow, brighter on the rump and upper tail-coverts; quill-feathers of wing brown, primaries and outer secondaries edged with olive-yellow and inner secondaries with all, or nearly all, the outer webs of this colour; tail brown, the feathers edged with olive-yellow for nine-tenths of their length; whole plumage below and sides of neck bright King's yellow.

Colours of soft parts. Irides bright pale yellow; bill dark horny, culmen and tip almost black and the gape dull yellowish: legs brown or grey-brown.

Measurements. Total length 180 to 190 mm.; wing 78 (♀) to 90 (♂) mm.; tail about 81 mm.; tarsus about 16 mm.; culmen about 13 mm.

Distribution. The Himalayas from the Sutlej Valley to East Assam; the forests of the Central Provinces; Orissa, South of the

Mahanadi, Eastern Bengal, hills and plains South of the Brahmaputra, Burma, Siam, Shan States, Yunnan. In Peninsular Siam and Burma it is replaced by the next form.

Nidification. This Yellow Bulbul makes a nest much like that of the two genera last described, but deeper and better built and nearly always made of tan-coloured materials amongst which dead leaves are always prominent. The lining is of fine grass-stems, occasionally of fine moss roots or similar material, whilst one nest was lined with mithna (*Bos frontalis*) hair. They breed most numerously in May and June but eggs are laid almost any time between early March and late August or even early September. The full clutch numbers two to four and the eggs differ from those of the other species of *Otocompsa* in being more profusely stippled and speckled all over with very fine markings varying in colour from reddish- or creamy-pink to deep purple-red or red-brown. 100 eggs average 22·3 × 16·5 mm. and vary in length between **24·2** × 16·4 and **20·5** × 16·8 mm. and in breadth between 21·9 × **17·2** and 23·1 × **15·3** mm.

Habits. In its actions, flight and food this bird is a true *Otocompsa* but it is often found in light scrub- and bamboo-jungle and sometimes on the outskirts of deep forest. In Assam it frequents the vicinity of the hill villages, cover of any kind in and around patches of cultivation and open places near roads and streams. It collects in the cold weather in flocks of half-a-dozen to a score or more individuals and frequents indifferently scrub, bushes, bamboos and high trees. They eat both insects and fruit and I have seen them on the ground eating wild strawberries and also feeding on termites as they came up from the ground. They are, for Bulbuls, not noisy birds and their song, which may be written "weet-tre-trippy-wit," with the last three syllables repeated twice or more, forms a rather sweet though jerky little song. They are found commonly up to 3,500 feet and rarely up to 5,000.

(414) Otocompsa flaviventris minor.

KLOSS'S BLACK-HEADED YELLOW BULBUL.

Otocompsa flaviventris minor Kloss, Ibis, 1918, p. 200 (Koh Lak, S.W. Siam).

Description. "Smaller than *O. fl. flaviventris* (Tickell) of Chota Nagpur; wing 83 mm. or less" (*Kloss*).

Distribution. Peninsular Burma and Siam and throughout the Malay Peninsula.

It is only after some hesitation that I have accepted this form. It certainly averages smaller, but the smallest Malay bird and the smallest bird from Assam both have a wing of 77 mm. On the other hand, Kloss's *minor* seems also to be a trifle darker and to have a decidedly shorter crest.

Nidification and **Habits.** Nothing recorded.

Genus **PINAROCICHLA** Sharpe, 1881.

This genus contains a single species very closely allied to *Otocompsa* but different in having the feathers of the back and rump with rigid and spinous shafts. If the fingers are passed along the back from the tail towards the head, the prickly character of the feathers can easily be felt.

The crest of *Pinarocichla* is shorter than it is in our Indian species of *Otocompsa* but not shorter than in the Siamese *Otocompsa flaviventris johnsoni* and very little shorter than in *O. fl. minor*.

(415) Pinarocichla eutilota.

THE CRESTED BROWN BULBUL.

Brachypus eutilotus Jard. & Selby, Ill. Orn., iv, pl. ii (1836) (Singapore).
Pinarocichla euptilosa. Blanf. & Oates, i, p. 279.

Vernacular names. None recorded.

Description. Crown greyish brown, with blackish shaft-stripes; lores, cheeks, ear-coverts and sides of neck paler, without stripes; back, rump and scapulars ochraceous olive, the feathers of the

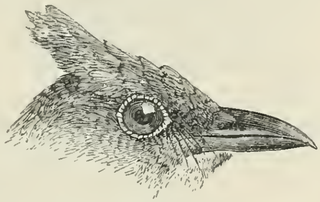


Fig. 79.—Head of *P. eutilota.*

rump banded with black showing up in places as black patches; upper tail-coverts and tail ferruginous, the outer three pairs of tail-feathers tipped with white; wing-coverts and inner secondaries brighter and more ochraceous than the back; primaries and outer secondaries dark brown, the outer webs ochraceous; the whole lower plumage whitish, suffused with grey on the breast and with yellow elsewhere.

Colours of soft parts. Iris crimson in the male, wood-brown to litharge-red in the female; bill black; legs and feet dark grey- or plumbeous-brown to black (*Hume & Davison*).

Measurements. Total length about 225 to 230 mm.; wing 84 to 99 mm.; tail about 95 mm.; tarsus about 18 to 19 mm.; culmen about 13 mm.

Distribution. Peninsular Burma and Siam to Sumatra, Java and Borneo.

Nidification. Unknown.

Habits. According to Davison this is a bird of open or cultivated country. Its habits are like those of the genus *Otocompsa*, its note is whistled "kick pettigrew" and its food consists principally of small berries but also to some extent of insects.

Genus **SPIZIXUS** Blyth, 1845.

The genus *Spizixus* contains species and subspecies ranging from Assam to China. They differ from all other Bulbuls in their very curious Finch-like bill and in having the nostrils partially concealed by overhanging plumelets.

It is a typical Bulbul in habits, nidification and voice and does not seem to have any connexion with the *Sibiinæ* as suggested by Oates.

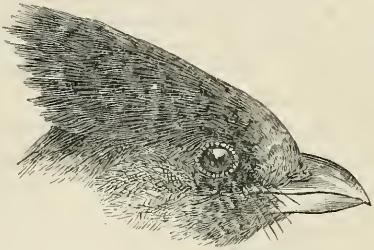


Fig. 80.—Head of *S. c. canifrons.*

In *Spizixus* the crest is thick and long but not much pointed. The bill is very short and deep, the culmen being gently curved throughout; the edges of the mandibles are slightly sinuated and notched near the tips. The tail is perfectly square and the tarsus short and weak.

The crest as shown in the woodcut is too bushy and not sufficiently pointed.

(416) Spizixus canifrons canifrons.

The Finch-billed Bulbul.

Spizixos canifrons Blyth, J. A. S. B., xiv, p. 571 (1845) (Khasia Hills); Blanf. & Oates, i, p. 280.

Vernacular names. *Kator-sit* (Kachin); *Daobulip-buku* (Cachari).

Description. Forehead running up in a point into the crown, grey; lores, chin and cheeks mixed grey and black; crown and round the eye black; ear-coverts grey, tinged with hair-brown on the upper parts; nape and sides of neck grey; chin dark brownish grey: whole upper plumage bright green tinged with olive, lightest on the rump and upper tail-coverts, darkest on the scapulars and upper back; wing-coverts the same, tinged with brown on the inner webs of the greater coverts: primaries and outer secondaries

SPIZIXUS C. CANIPONS.
The Finch-billed Bulbul.
$2/3$ life size.

brown on the inner webs green on the outer, the inner secondaries green on both webs but more or less tinged with brown on the inner; tail yellowish green, with an inch-wide band of dark brown near the tips; lower plumage dull greenish yellow, brightening to yellow on the belly and under tail-coverts.

Colours of soft parts. Iris red-brown to pure vandyke-brown; bill very pale straw-white or ivory-white; legs and feet dull deep flesh-colour to grey-brown.

Measurements. Total length about 210 mm.; wing 79 to 89 mm.; tail about 90 mm.; tarsus about 18 to 19 mm.; culmen about 13 mm.

Distribution. Hills South of the Brahmaputra, Arrakan, Chin and Kachin Hills to Yunnan.

Rothschild (Nov. Zool., xxvii, p. 50, 1921) points out quite correctly that Bangs and Phillips's *S. c. ingrami* is merely the immature *S. c. canifrons* which has the throat grey instead of brown and the under parts rather dull olive-green instead of greenish yellow.

Nidification. The Finch-billed Bulbul breeds from the end of April to the end of July from about 3,500 feet up to the highest peaks in the North Cachar, Khasia and Naga Hills and up to 6,000 or even 7,000 feet in the Kachin and Yunnan Hills. The nest can be told at a glance from any other Bulbul's nest, for it is made entirely of tendrils, some stout, some fine and rarely they may be mixed with a few tiny twigs or scraps of bracken, but these are so scanty that they are not noticeable. The lining, as a rule, consists merely of tendrils finer than the rest but I have seen scraps of dried bracken also used for this purpose. The internal shallow cup measures something under 3 inches (75 mm.) in diameter by under 1 inch (25 mm.) deep but the outer measurements are difficult to ascertain as the ends of the tendrils stick out in all directions. The nests are extremely well put together and stand very rough handling. The site selected is usually in a tall, scraggy bush or a small sapling, some 5 to 10 feet from the ground, standing in dense evergreen forests or in thick scrub-jungle.

The eggs number two or three only, four being quite exceptional, and are like very large examples of those of *Xanthixus flavescens*. The ground-colour is anything from the palest pink to a rather deep brick-red pink but they are so completely covered with innumerable freckles and tiny blotches of light red, deep red or dark brownish red, that little of the ground-colour is visible. Many eggs, indeed, look almost unicoloured at a short distance. In shape they are long, blunt ovals and the texture is fine, practically glossless and very fragile. 100 eggs average 25·7 × 17·6 mm.; the greatest length and breadth **28·1** × 18·0 and 26·0 × **19·3** mm. and the least each way **24·0** × **16·1** mm.

Habits. The Finch-billed Bulbul is a bird of fairly high altitudes and is not found below 3,000 feet even in the cold

season, whilst in the breeding season it keeps to heights between 4,000 and 7,000 feet. They collect in flocks of a dozen or more individuals in winter, feeding both on the higher trees and in the bushes and undergrowth. Their food consists of insects of all kinds, but largely small beetles, seeds and some soft fruits such as the various *Fici*. In the stomachs of some specimens killed in N. Cachar were numerous tiny fragments of quartz. In the breeding season they seem to desert the higher trees and to keep to the lower jungle. Their notes are those of the family but full, soft and sweet and easily distinguishable from those of their nearest relations. They fly well but are not very active or quick on their feet.

Genus **TRACHYCOMUS** Cabanis, 1851.

This genus is represented by a single species of large size, striated plumage and peculiar structure. It has no crest but the crown is covered with dense, bristly, decomposed feathers of a yellow colour. The tarsus is remarkably strong, with a few scutellations in front and sometimes quite smooth. The bill is short, being about half the length of the head, the rictal bristles are strong and the nuchal hairs short. The wing is comparatively short and rounded and the tail-feathers well graduated.

The peculiar structure of the feathers of the crown and its large size will suffice to separate this Bulbul from all others.

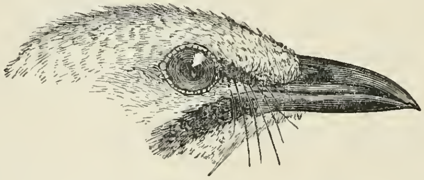


Fig. 81.—Head of *T. ochrocephalus.*

(417) Trachycomus ochrocephalus.

THE YELLOW-CROWNED BULBUL.

Turdus ocrocephalus Gmel., S. N., i, p. 821 (1788) (Ceylon and Java).
Trachycomus ochrocephalus. Blanf. & Oates, i, p. 281.

Vernacular names. *Burong-baran-baran* (Malay).

Description. Forehead, crown, a patch under the eye, branching out into two streaks, one extending partially over the ear-coverts and one under, straw-yellow; ear-coverts brown with white shafts; lores and cheeks black, divided by a yellowish streak; upper plumage and lesser wing-coverts ashy-brown dashed with green, all the feathers, except those of the rump, with conspicuous

white shafts; the upper tail-coverts are margined with olive-green; greater coverts, wings and tail dark brown; the wing-quills edged with olive-green, the tail-feathers edged with greenish and tipped below with pale ochraceous; chin and throat white; breast and sides of the neck ashy-brown, with white shaft-streaks; sides of the body brown, with fainter shaft-streaks; abdomen and vent brownish white; thighs and under tail-coverts ochraceous; under wing-coverts and axillaries ochraceous brown.

Colours of soft parts. Legs and feet dark horny-brown or black; bill black; iris pale or litharge-red (*Hume & Davison*).

Measurements. Total length 265 to 275 mm.; wing 115 to 123 mm.; tail about 95 to 100 mm.; tarsus about 25 to 28 mm.; culmen about 18 to 19 mm.

Distribution. Peninsular Burma and Siam throughout the Malay Peninsula to Sumatra, Java and Borneo. This bird does not occur in Ceylon and its typical locality must therefore be restricted to Java (Stuart Baker, Journal B. N. H. S., xxvii, p. 470, 1921).

Nidification. Mr. J. Darling took the nest of this Bulbul at Kossum on the 2nd July. In appearance it was "of the ordinary Bulbul type but much bigger." It was made of fern, grass and moss roots and a long piece of a trailing orchid, about 3 feet long, wound round and round. It was placed in a high bush, 10 feet from the ground and in a very exposed position. The eggs, two in number, are much like those of *Microscelis* and measure about 26·0 × 18·5 mm.

Habits. This Bulbul is a bird of the plains, being found in open country and not in forest or heavy jungle. Davison records that it is found in small parties of four or five to eight or nine birds. "It is very garrulous and keeps up a continuous chatter but it also has a song which is particularly rich and powerful." In Mergui he found the Yellow-crowned Bulbul frequenting gardens. Its food consists of berries and insects and it may often be seen hopping about on the ground in search of the latter.

Genus **IOLE** Blyth, 1844.

The genus *Iole* is not marked by any very striking characteristic beyond the sharp carination of the upper mandible. In many respects it is intermediate between *Hemixus* and *Pycnonotus* but differs from both in the point above noted.

In *Iole* the feathers of the crown are slightly lengthened but they do not form a crest. The bill is about three-quarters the length of the head and when viewed laterally is of much the same shape as that of *Hemixus* (fig. 75, p. 375). The nuchal hairs are short. In *Iole* there are generally numerous hairs springing from the back but in *Iole nicobariensis* these hairs are very inconspicuous and on this account Blyth proposed the generic name *Ixocincla* for this species, and if it is retained the specific name would then be *virescens* Blyth. If, however, a careful examination

is made these hairs will be found, though they are short and not numerous. Although, therefore, somewhat aberrant, I retain it in the genus *Iole.* Sharpe retained the name *Ixocincla* for the other species of *Iole* and placed *Ixocincla virescens* of Blyth in the genus *Hypsipetes* (*Microscelis*) but in making both these changes he was, of course, quite incorrect.

Key to Species.

A. Lower plumage streaked	*Iole malaccensis,* p. 404.
B. Lower plumage not streaked.	
a. Crown and upper plumage uniform in colour.	
a'. Entire lower plumage bright yellow .	*Iole icterica,* p. 405.
b'. Lower plumage dull yellow........	*Iole olivacea,* p. 406.
b. Crown distinctly darker and browner than the back	*Iole nicobariensis,* p. 408.

(418) Iole malaccensis malaccensis.

THE STREAKED BULBUL.

Hypsipetes malaccensis Blyth, J. A. S. B., xvi, p. 574 (1845) (Malacca).
Iole malaccensis. Blanf. & Oates, i, p. 283.

Vernacular names. None recorded.

Description. Upper plumage, with lesser wing-coverts, brownish green; greater coverts, wings and tail dark brown, the feathers edged with the colour of the back; ear-coverts brownish green with pale shafts; lores ashy-grey; cheeks, chin, throat, breast and sides of the body ashy with broad greyish-white shaft-streaks, fainter on the last-named; abdomen, vent and under tail-coverts white; under wing-coverts and axillaries pale yellow.

Colours of soft parts. Legs and feet pinkish brown to reddish brown; bill horny-brown or very dark horny-brown; iris mahogany-brown to litharge-red (*Hume & Davison*).

Measurements. Length about 230 mm.; wing 109 to 115 mm.; tail about 90 to 95 mm.; tarsus about 18 mm.; culmen about 18 to 20 mm.

Distribution. Peninsular Burma and Siam and Malay Peninsula. Birds from Cochin China seem identical, whilst those from the Southern Islands are perhaps separable.

Nidification. Eggs and nest obtained by Mr. W. A. T. Kellow on the 17th June were like those of the next bird. The nest is a small cradle of twigs, leaves and grasses bound by cobwebs to, and interlaced around the twigs of a small forked branch of a bush. The two eggs are white with innumerable freckles of light yellowish- and pinkish-red and measure 23·1 × 16·9 and 22·1 × 16·5 mm.

Habits. Beyond Davison's remarks to the effect that this Bulbul's habits are similar to those of *Hemixus m. tickelli*, nothing has been recorded.

(419) Iole icterica.

THE YELLOW-BROWED BULBUL.

Criniger ictericus Strickl., A. M. N. H., xiii, p. 411 (1844) (Mahabaleshwar).
Iole icterica. Blanf. & Oates, i, p. 283.

Vernacular names. *Huldi Bulbul* (Mysore).

Description. Whole upper plumage bright olive-yellow; wings dark brown, the outer webs of the feathers olive-yellow and the inner edged with the same; tail-feathers olive-yellow, with brighter edges and the inner edges and shafts yellow below; a streak from the nostril to the eye and a circle round it, sides of the head and whole lower plumage and under wing-coverts bright yellow, washed with olive-green on the flanks.

Colours of soft parts. Iris wood-brown; legs and feet pale blue, claws bluish-horny; upper mandible brownish black, lower pale brown, darkest along the edges and tips (*Davison*); iris blood-red, dark red (*Butler*); iris blood-red (*Jerdon*).

Measurements. Total length about 200 mm.; wing 94 to 98 mm.; tail about 94 mm.; tarsus about 19 mm.; culmen about 15 mm.

Distribution. The West side of Southern India from about Mahabaleshwar to Cape Comorin and Ceylon.

Nidification. The Yellow-browed Bulbul breeds principally in February and March from Kanara to Travancore but eggs have been taken as late as 15th May (*Davidson*); in the Nilgiris and higher hills it breeds from April to the end of May or early June. In Ceylon it apparently breeds in July and August. The nest is like a small neat edition of those of *Microscelis*, a cradle in a horizontal fork or between two twigs, made of leaves, soft, pliant twigs and grasses, firmly wound round the supporting twigs and well plastered with cobwebs. The lining is of fine grasses only. The site selected is on a small sapling or high bush, 5 to 10 feet from the ground, which may be either in dense forest, thin scattered tree- or bush-jungle, or even in a small spinney or clump of bushes.

The eggs are nearly always two only and are very different from those of any other genus, except *Kelaartia*, approaching nearest to very bright pale eggs of *Xanthixus* and *Spizixus*. The ground is a very pale pink, almost white in many cases, and they are profusely speckled, more or less, all over with pale bright reddish- or pinkish-brown. In a few eggs the markings are most numerous at the large end, where they form an ill-defined cap or ring. Thirty eggs average 23·1 × 16·6 mm. and the extremes are: maxima **25·0** × **17·2** mm. and minima **21·3** × 16·3 and 22·0 × **15·5** mm.

Habits. This Bulbul is found at all heights from 2,000 to about 6,500 feet, frequenting forest, both light and dense, more open country and even sometimes venturing into gardens and orchards.

It is said to have a soft, mellow whistle and to feed on insects, seeds and certain fruit. It is found in small flocks in the non-breeding season.

Iole olivacea.

Iole olivacea olivacea is an inhabitant of Singapore but there are several geographical races found within the limits of the present work, one of which, *virescens*, has been accorded the status of a species and the other two until recently ignored entirely.

Key to Subspecies.

A. Under tail-coverts yellow .... *I. olivacea virescens*, p. 406.
B. Under tail-coverts cinnamon.
  a. Wing under 82 mm. .... *I. o. cinnamomeoventris*, p. 407.
  b. Wing over 82 mm. .... *I. o. lönnbergi*, p. 408.

(420) Iole olivacea virescens.

THE OLIVE BULBUL.

Iole virescens Blyth, J. A. S. B., xiv, p. 573 (1845) (Arrakan): Blanf. & Oates, i, p. 284.

Vernacular names. *Daobulip-gurrmo* (Cachari).

Description. Lores and short eyebrow olive-yellow; ear-coverts dark olive; remainder of upper plumage from forehead to rump olive-green; upper tail-coverts and tail rather bright rufous-brown; sides of the neck olive-brown; whole under-surface from chin to vent yellow, more or less suffused with olive-yellow; wings dark brown, the coverts and inner secondaries broadly, the remaining feathers narrowly, edged with rufescent olive-brown.

Colours of soft parts. Iris brown or red-brown; eyelids grey; bill bluish-horn, the mouth flesh-colour; legs and claws pinkish brown.

Measurements. Length about 185 to 190 mm.; wing 76 to 82 mm.; tail about 85 mm.; tarsus about 18 mm.; culmen about 15 mm.

Distribution. Cachar, Sylhet, Tippera and the plains and lower hills of Western Burma as far South as Pegu.

Nidification. There is apparently nothing recorded about the nesting of this Bulbul beyond my own notes in 'The Ibis' and Bombay Natural History Society's Journal (1892, p. 6). The nests are compact, well-made cups composed of a few dead leaves and tiny elastic twigs well interwoven with and bound together by long strips of what looks like the inner bark of some tree. They were all, with one exception, in horizontal forks, the branches of which were incorporated in the sides of the nest about two-thirds up. The lining was in each case of black fern roots and the long red tendrils of a small yellow ground-convolvulus. All my nests

were taken in May well inside thin jungle of mixed bamboo and secondary growth, thin forest or deserted cultivation patches inside deep forest and all were placed over or close to game-tracks.

The eggs are in type like those of *icterica* but darker and more handsome, some closely approaching speckled eggs of *Molpastes* in general appearance. They measure about 22·6 × 16·3 mm.

Habits. This Bulbul seems to be nowhere common; I never saw it but in pairs or singly, a rather secretive, quiet bird, feeding on the higher bushes and thin tree-tops but not, apparently, frequenting the more dense and humid tree-forest. It is said to be more often met with in flocks in Pegu, where it does sometimes enter quite heavy forest. Beyond the jarring "chir" made by the birds caught in nooses, I have not heard it utter any call.

It is found from the level of the plains up to some 2,000 feet.

(421) Iole olivacea cinnamomeoventris.

The Tenasserim Olive-Bulbul.

Iole virescens cinnamomeoventris Stuart Baker, Bull. B. O. C., xxxvii, p. 16 (1917) (Tenasserim).

Vernacular names. None recorded.

Description. This race differs from the last in being darker and more ruddy and less green above; it is also duller and less yellow below, the throat and fore-neck being grey, only faintly tinged with yellow; the under tail-coverts are cinnamon, this colour often extending on to the belly.

Colours of soft parts. "Iris dark; maxilla blackish, mandible grey; feet fleshy-brown" (*E. G. Herbert*). "Irides clear grey, dark slaty, salmon-pink or golden-brown" (*Davison*).

Measurements. About the same as in the last; wing 73 to 80 mm., in one 82 mm.

Distribution. Peninsular Burma and Siam extending as far North as Karenni and Central West Siam. Robinson and Kloss identify birds from Cochin China and Annam as belonging to this subspecies. One of their specimens, a male from Annam, is as much as 84 mm. in wing measurement.

Nidification unknown.

Habits. According to Davison "This is a forest bird but occurring also in thin tree-jungle and even entering well-wooded gardens. It is met with singly or in pairs, foraging about the trees and living chiefly on berries, and never, I believe, descending to the ground. They are rather lively birds, moving about a great deal and having a pleasant soft whistling note, something like that of *Ixos finlaysoni*, but distinguishable at once."

(422) Iole olivacea lönnbergi.

THE SIAM BULBUL.

Criniger lönnbergi Gyldenstolpe, Kung. Sven. Vetensk. Handl., 50, No. 8, p. 24 (1913) (Bang-hue-hom, N. Siam).

Vernacular names. None recorded.

Description. This race differs from *I. o. virescens* in having the under tail-coverts cinnamon instead of yellow and from *cinnamomeoventris* in being more yellow below and more green above. From both of these subspecies it differs in being much larger with a wing of 83 to 89 mm.

Measurements. Wing 83 to 89 mm.; culmen 15 to 15·5 mm.; tarsus 15·5 to 16·0 mm.; tail 76 to 83·5 mm. (*Gyldenstolpe*).

Distribution. This is a Northern form of the last bird but the limits of neither are as yet definable. Gyldenstolpe found it in N. Siam and specimens from the Shan States and Yunnan are also referable to this form. It will probably also be found in the S.E. Kachin States.

Nidification. Unknown.

Habits. Gyldenstolpe records that he found it shy but not uncommon in some places in North Siam, frequenting dense primeval forests in small flocks.

(423) Iole nicobariensis.

THE NICOBAR BULBUL.

Hypsipetes nicobariensis Horsf. & Moore, Cat., i, p. 257 (1854) (Nicobars).
Iole nicobariensis. Blanf. & Oates, i, p. 285.

Vernacular names. None recorded.

Description. Head and nape dark brown; sides of the head grey; upper plumage olive-green; wings and tail hair-brown, the feathers all edged with olive-green externally; chin, throat and upper breast white, faintly streaked with pale brown, grey or yellowish; remaining lower parts and under wing-coverts pale primrose-yellow, slightly mottled with white; the under tail-coverts yellow with brown centres.

Colours of soft parts. Legs and feet dark horny, greenish brown or greenish plumbeous; bill deep horny-brown, lower mandible and edge of upper dull yellow; iris brown (*Hume*).

Measurements. Length about 200 mm.; wing 96 to 103 mm.; tail about 95 mm.; tarsus about 18 to 19 mm.; culmen about 20 mm.

Distribution. The Nicobar Islands of Teressa, Bompoka, Tillanchong, Camorta, Nancoury, Trinkat, Katchall and Pilu Milu.

Nidification. Unknown but as Davison shot very young birds in February, they presumably lay about November to December.

Habits. Davison remarks:—"Occurs only at the Nicobars, where it is comparatively common; it keeps to the forest generally, but is also found in gardens, in the secondary jungle, and not infrequently in places where there are only a few scattered bushes; it is usually seen singly, in pairs, or in small parties of five or six; but I have seen them on several occasions in flocks of nearly a hundred. They have a chattering note, very similar to the other *Hypsipetes*, and when they are in flocks they make nearly as much noise as a flock of Mynas settling down for the night."

Genus **RUBIGULA** Blyth, 1845.

The genus *Rubigula* contains species of small Bulbuls of handsome appearance with squamated plumage. The bill is broader than high and shorter than the tarsus; the rictal bristles are strongly developed and the nostrils are exposed and not hidden by bristles. The tail is well graduated.

The only member of the genus found within our limits is a geographical race of *Rubigula squamata* of Java.

(424) Rubigula squamata webberi.

WEBBER'S BULBUL.

Ixidia webberi Hume, S. F., viii, p. 40 (1879) (Tonka).

Vernacular names. None recorded.

Description. Head and neck black; back golden olive, shading into golden yellow on the upper tail-coverts; tail black with a broad diagonal white band on the end of the outer tail-feathers, decreasing in extent inwardly on each succeeding pair; visible portions of the wing like the back but greater coverts edged with brighter yellow; quills and bastard wing black; below, throat and sides of neck white, with tiny black striæ; breast and flanks black with white edges, giving a beautiful squamated appearance to these parts; centre of abdomen white; under tail-coverts deep bright yellow.

Colours of soft parts. Irides deep red; bill brownish black; legs and feet plumbeous brown.

Measurements. Total length about 150 mm.; wing 73 to 76 mm.; tail about 60 to 65 mm.; tarsus about 15 mm.; culmen about 14 mm.

Distribution. Peninsular Burma and Siam, throughout Malay Peninsula to Sumatra.

Nidification and Habits. Practically nothing recorded.

Genus PYCNONOTUS Kuhl, 1826.

With the exception of the genus *Molpastes*, the present genus contains a far greater number of species and subspecies than any other and of these there are representatives found from Ceylon to Central India and from Arrakan to the Malayan Islands and again East through the Kachin Hills to China. The genus is, however, not represented in Northern India or North-West Burma.

In *Pycnonotus* the bill is of small size and the nuchal hairs are obsolete or small. Many of the species are of dull colour but a few are of brilliant plumage.

Key to Species.

A. Throat white.	[p. 410.
a. Forehead and crown dark brown....	*P. goiavier analis*, [p. 411.
b. Forehead and crown black	*P. aurigaster xanthorrhous*,
B. Throat grey streaked with bright yellow	*P. finlaysoni*, p. 412.
C. Throat yellow.	
c. Crown black	*P. melanicterus*, p. 414.
d. Crown yellow....................	*P. xantholæmus*, p. 415.
D. Throat ruby-red	*P. gularis*, p. 415.
E. Throat slaty-blue	*P. cyaniventris*, p. 416.
F. Throat brown or grey.	
e. Under tail-coverts yellow	*P. luteolus*, p. 417.
f. Under tail-coverts brown or buff.	
a'. Ear-coverts silvery-white or with silvery-white shafts............	*P. plumosus*, p. 418.
b'. Ear-coverts like the crown.	
a''. Wing over 75 mm.	*P. simplex*, p. 421.
b''. Wing under 75 mm.	*P. erythropthalmus*, p. 422.

(425) Pycnonotus goiavier analis.

THE YELLOW-VENTED BULBUL.

Turdus analis Horsf., Trans. L. S., xiii, p. 147 (1820) (Java).
Pycnonotus analis. Blanf. & Oates, i, p. 287.

Vernacular names. *Mérébah* (Malay).

Description. The whole upper plumage brown tinged with olive, darker on the head and the feathers with faint pale edges; wings and tail dark brown edged with olive-brown; a broad supercilium white; lores and feathers on the eyelids black; ear-coverts pale brown; cheeks, chin and throat whitish; breast brown, the feathers with pale edges; abdomen white suffused with brown and flanks darker brown; under tail-coverts sulphur-yellow.

Colours of soft parts. Iris wood-brown or chocolate; legs, feet, claws and bill black.

Measurements. Total length about 200 mm.; wing about 83 to 91 mm.; tail about 80 to 85 mm.; tarsus about 20 mm.; culmen about 15 mm.

Distribution. Tenasserim and Malay Peninsula, Sumatra, Java, Borneo, Siam, Cochin China.

Nidification. The Yellow-vented Bulbul apparently breeds twice in the year, as a good series of nests and eggs were obtained by Mr. W. A. T. Kellow round about Perak and Taiping in February and early March and again in May. The nests are exactly like those of *Otocompsa* and are placed in bushes and small trees in scrub-jungle and thin forest. The eggs also are indistinguishable from those of that genus and are normally only two or three in number. They average (20 eggs) 22·4 × 15·9 mm. and the extremes are **23·6 × 15·1** mm.; **21·0 × 16·8** mm. The longest egg is also the most narrow and the shortest is also the broadest.

Habits. Davison describes this bird in Mergui, where it is very abundant, as being just like *Otocompsa* in habits, food and the country it frequents. He says:—"I have repeatedly seen it on the ground hopping about. It feeds largely on insects, such as grasshoppers etc., but also on berries and fruit, and I have seen it clinging to mangoes and pecking away at the fruit. Its note is extremely like that of *Otocompsa emeria*, 'kick, kick, pettigrew,' repeated several times. It is usually found singly or in pairs, though often half-a-dozen or more may be seen seated about the bushes near each other, but I do not think they act in concert or ever go in flocks; they are not shy."

(426) Pycnonotus aurigaster xanthorrhous.

ANDERSON'S YELLOW-VENTED BULBUL.

Pycnonotus xanthorrhous Anderson, P. A. S. B., 1869, p. 265 (Kakhyen Hills); Blanf. & Oates, i, p. 286, footnote.

Vernacular names. *Kator-tor-prong* (Kachin).

Description. Forehead, crown, lores, a ring round the eye and a narrow cheek-stripe extending to the end of the ear-coverts, black; a small spot of deep red at the base of the lower mandible near the gape; ear-coverts glossy hair-brown, the feathers with obsolete pale margins; wings and tail darker brown, the former margined with the colour of the back, the latter narrowly tipped with white; sides of the neck brown, meeting in a crescentic band across the breast; abdomen and vent whitish; sides of body and thighs brown; under tail-coverts deep golden yellow; under side of shafts of tail-feathers white.

Colours of soft parts. Iris brown or brownish red; bill, legs and feet black.

Measurements. Total length about 200 mm.; wing about 85 to 93 mm.; tail about 95 mm.; tarsus about 23 mm.; culmen about 15 mm.

Distribution. The hills of Eastern Burma from Karenni to the Kachin (Kakhyen) Hills, Shan States, Yunnan to China.

Nidification. Col. H. H. Harington writes (Journal B.N.H.S., xix, p. 121):—"It always seems to build its nest, which is of the usual Bulbul type, within 2 or 3 feet of the ground, generally placing it in a bramble-bush amongst long grass and weeds, and

almost invariably lays three eggs, only on one or two occasions I have taken two incubated eggs." The eggs are exactly like those of *Molpastes h. bengalensis* but do not go through nearly as wide a range of variations. The average of thirty eggs is 21·7 × 16·2 mm. and the extremes are 23·5 × 16·5 mm.; 21·3 × 16·8 mm.; 21·0 × 16·0 and 21·1 × 15·8 mm.

Habits. A common and familiar bird throughout its range and found from 2,000 to 6,000 feet, frequenting both lighter jungle, scrub, bamboo-jungle, etc. and the quite open country round villages. It does not apparently actually enter gardens and compounds.

Pycnonotus finlaysoni.

The species *finlaysoni* extends from Tenasserim to the extreme South of the Malay Peninsula, North to Karenni, Kachin Hills, Siam, Annam, Cochin China. Two races are found within the limits of this work.

Key to Subspecies.

A. Anterior half of crown of a different colour to the hinder half and nape .... *P. finlaysoni finlaysoni*, [p. 412.
B. The whole crown and nape of the same colour .... *P. fi. davisoni*, p. 413.

(427) Pycnonotus finlaysoni finlaysoni.

FINLAYSON'S STRIPE-THROATED BULBUL.

Pycnonotus finlaysoni Strickl., A. M. N. H., (1) xiii, p. 411 (1844) (Malacca, Hartert); Blanf. & Oates, i, p. 287.

Vernacular names. None recorded.

Description. Forehead as far back as the eyes bright yellow, the feathers edged with ashy-brown; lores black, narrowly edged above with orange; cheeks, ear-coverts, throat, chin and upper neck grey with bright yellow streaks; crown and nape deep grey, the centres of the feathers paler; upper plumage and wing-coverts olive-green, the back washed with ashy; wing-quills dark brown edged with olive-green; tail olive-green, the outer webs brightest; breast, upper abdomen and flanks dark ashy, the shafts paler; lower abdomen yellowish grey; vent and under tail-coverts bright yellow; edge of wing, under wing-coverts and axillaries yellow.

Colours of soft parts. Iris pale to deep brown; bill bluish black to black, paler at the base, mouth dark flesh-colour; legs dusky plumbeous to almost black.

Measurements. Total length about 190 mm.; wing 75 to 87 mm.; tail about 85 mm.; tarsus about 20 mm.; culmen about 15 mm.

Distribution. Tenasserim East of the Sittaung River from Toungoo South through the Malay Peninsula, Sumatra, Java

and Borneo; East throughout Siam to Cochin China, Annam and Yunnan.

Nidification. This Bulbul breeds in the plains and lower hills up to some 1,500 feet, making the usual Bulbul's cup-shaped nest of leaves, grass and fern roots, fine twigs, etc., lined with fine grass and fern roots. It is generally strongly but rather slightly made and is placed in bushes or saplings at any height from 3 to 15 feet from the ground. It is built in small jungle or scrub, occasionally in denser forest and sometimes quite close to villages and human habitations. The eggs are either two or three in number and most of them resemble richly-marked eggs of *Otocompsa*, though they vary a good deal *inter se.* Fifteen eggs average 22·4 × 16·1 mm.; the extremes are **23·1 × 16·5** and **21·4 × 15·2** mm.

The breeding season is from February to June.

Habits. Davison remarks that this is the most common form of Bulbul in the plains' portion of Tenasserim. "It does not affect forests but is found on the outskirts of it, in scrub-jungle, in cleared land and in gardens, giving perhaps the preference to the latter. They do not go in flocks but there are generally so many about that it is difficult to say whether they are in pairs or single. The note is a rather pleasant, feeble whistling chirrup, continually uttered whether the bird is sitting or flying. It is a very lively bird, always on the move." It feeds both on berries and insects, which it takes on the ground as well as on trees and bushes.

(428) Pycnonotus finlaysoni davisoni.

Davison's Stripe-throated Bulbul.

Ixus davisoni Hume, S.F., iii, p. 301 (1875) (Arrakan).

Vernacular names. None recorded.

Description. Differs from the preceding bird in having the forehead and crown concolorous except for a narrow yellow line just above the lores; the yellow on the throat and chin is much less in extent; the whole head and nape is dull olive with faint golden centres to the feathers.

Colours of soft parts as in *P. fi. finlaysoni.*

Measurements. A slightly bigger bird than Finlayson's Bulbul, the wing running from 76 mm. to 90 mm.

Distribution. Arrakan, Chin Hills to Tenasserim West of Sittaung River.

Nidification. Oates obtained two nests in Pegu—cups made of stems of weeds, lined with grass and placed low down, one in a bush, the other in a creeper about 4 feet from the ground. In both cases there were two eggs, typical Bulbul's eggs, in every way,

and measuring between 23·3 × 16·5 mm. and 20·8 × 15·5 mm. They breed in June.

Habits. These do not differ in any way from those of the last bird.

(429) Pycnonotus melanicterus.

THE BLACK-CAPPED BULBUL.

Muscicapa melanictera Gmel., S. N., i, p. 941 (1789) (Ceylon).
Pycnonotus melanicterus. Blanf. & Oates, i, p. 288.

Vernacular names. *Ka-karulla* (Ceylon).

Description. Head to neck above black; remaining upper plumage and wing-coverts olive-green; quills brown, their outer webs olive-green; tail dark brown, the central pair suffused with olive-green on the base and the others all tipped with white; whole lower plumage bright yellow, the sides of the breast and flanks washed with olive; under wing-coverts and edge of wing yellow.

Colours of soft parts. Iris bright to dull red; bill black; legs and feet dark blackish brown to practically black. In the female the iris is brown and the "legs and feet deep plumbeous or blackish blue" (*Legge*).

Measurements. Total length about 160 to 165 mm.; wing 68 to 74 mm.; tail about 60 to 65 mm.; tarsus about 15 mm.; culmen about 13 mm.

Distribution. Ceylon only.

Nidification. The nest is a small cup of dead leaves, fine twigs and grasses, stems of plants and roots firmly bound together and lined with fine dead grass. It is placed in a bush, creeper or other cover at from 3 to 10 feet from the ground, generally, however, within 4 or 5 feet. Legge records its nest from April to September and eggs have been taken by Messrs. Stewart, Phillips and Sykes between January and May, so that it probably breeds in almost any month of the year. The nest is nearly always placed in forest, that which is rather thin being preferred to that which is very dense.

The eggs, of which there are either two or three, have a reddish-white ground-colour and are profusely covered with small blotches of various shades of reds and red-browns underlying which are sparser secondary markings of neutral tint and lavender-grey. Six eggs average 21·2 × 15·6 mm. The texture is not nearly so smooth as in most Bulbuls' eggs and is very dull and glossless.

Habits. This beautiful little Bulbul is found from the plains up to about 5,000 feet, wherever there is forest or the country is well-wooded and wet. It is not found in the dry zone and prefers above all lightly forested valleys along which streams run. It feeds on insects and seeds which it seeks in the lower bushes and trees, seldom wandering into the higher ones. It consorts in

small parties of four or five and is said to be very sociable with other birds. Legge describes its note as "whee-whee, whee-whee."

(430) Pycnonotus xantholæmus.

The Yellow-throated Bulbul.

Brachypus xantholæmus Gould, P. Z. S., 1835, p. 186 (Belgaum).
Pycnonotus xantholæmus. Blanf. & Oates, i, p. 289.

Vernacular names. *Kondapoda-pigli* (Tel.).

Description. Forehead, crown and sides of the head yellowish green, the feathers near the nostrils dusky; chin and throat bright yellow; upper plumage grey, the upper tail-coverts tinged with green; wings and tail brown, the outer webs washed with yellowish green and the tail-feathers tipped with yellowish white; breast and sides of neck and body grey, turning to whitish on the abdomen: under tail-coverts and edge of wing bright yellow; thighs dull yellow; under wing-coverts pale yellow.

Colours of soft parts. Iris bright red; bill and legs black.

Measurements. Length about 185 to 190 mm.; wing about 81 to 88 mm.; tail about 88 mm.; tarsus about 20 mm.; culmen about 14 to 15 mm.

Distribution. Travancore, Mysore and Eastern Ghats.

Nidification. Mr. P. Roscoe Allen (Journal B. N. H. S., xviii, p. 905) obtained several nests of this rare Bulbul on a peak called Horsely Konda, south of the Cuddapah District in Madras, where he found it not uncommon. The nests are described as typical Bulbuls' nests and the eggs as of the ordinary type of Bulbuls' eggs, "white marked with purple and brick-red" and measuring $21{\cdot}1 \times 17{\cdot}0$ mm. Of the nests one was placed actually on the ground between two boulders and a second on a dwarf date-palm. Another nest, taken by Mr. C. L. Wilson at Bellary, is described as unusually bulky and heavy for a Bulbul's nest. The breeding season appears to be May, June and July.

Habits. The Yellow-throated Bulbul is found from the foot-hills up to nearly 5,000 feet but very little is known of its habits. It apparently visits the higher ranges at about 4,000 feet for breeding purposes and is said to be a shy, active bird, very restless and, when disturbed, flying a considerable distance before again settling.

(431) Pycnonotus gularis.

The Ruby-throated Bulbul.

Brachypus gularis Gould, P. Z. S., 1835, p. 186 (Belgaum).
Pycnonotus gularis. Blanf. & Oates, i, p. 289.

Vernacular names. None recorded.

Description. Forehead, crown, nape, sides of head and extreme point of chin black; throat ruby-red, the feathers long and rather bristly; upper plumage yellowish green; wings brown, the outer webs of the feathers yellowish green; tail the same; lower plumage bright yellow; under wing-coverts and edge of wing yellow.

Colours of soft parts. Iris pale cream to bright yellow; bill black; legs and feet dark plumbeous to almost black, claws black.

Measurements. Length about 180 mm.; wing 71 to 78 mm.; tail about 66 mm.; tarsus about 15 mm.; culmen about 11·5 to 12·0 mm.

Distribution. Western India from Kanara to South Travancore.

Nidification. Nests taken by Mr. J. Davidson are described as "small cups, outwardly composed of a mass of large, red dead leaves, slightly bound with one or two roots and spiders' web, and lined inside with a few roots and grass stems of a coarse description." The nests were taken from low bushes, only a foot or two above the ground, higher bushes and small saplings as high as 10 feet up. The nests are all placed in forest, generally dense, sometimes thinner but never in open country.

"The eggs are two in number, very small for the size of the bird; they are quite devoid of gloss and of a pink colour, mottled thickly all over with the smallest possible dark reddish-brown and purple spots." Eggs sent me by Messrs. J. Davidson and T. R. Bell measure about $20{\cdot}9 \times 15{\cdot}2$ mm. They are very like those of the last bird.

Habits. This is said to be a shy Bulbul, keeping to forested areas in the plains, sometimes going about in small flocks and sometimes in pairs or singly. Davidson says that it is common in Siddapur and in the wooded parts of Honwar and Kumta and to a less extent in the denser forests of Karawar, Ankola and Yellapur.

(432) Pycnonotus cyaniventris cyaniventris.

THE BLUE-BELLIED BULBUL.

Pycnonotus cyaniventris Blyth, J. A. S. B., xi, p. 792 (1841) (Malay Peninsula); Blanf. & Oates, i, p. 290.

Vernacular names. None recorded.

Description. The whole head and lower plumage deep slaty-blue; lores black; forehead and a streak over the lores paler blue; upper plumage and wing-coverts bright greenish yellow; tail dark brown, the outer webs greenish yellow nearly up to the tips; wing-quills dark brown, all but the first two primaries edged with greenish yellow; under wing-coverts and edge of wing pale yellow; under tail-coverts bright yellow.

Colours of soft parts. Iris dark brown, dark plumbeous slate and grey-brown; bill black; legs and feet very dark plumbeous, claws horny-brown, sometimes almost black.

Measurements. Total length about 165 mm.; wing 68 to 78 mm.; tail about 66 mm.; tarsus about 15 mm.; culmen 12 to 13 mm.

Distribution. Peninsular Burma and Siam to Sumatra.

Nidification. Nest and eggs collected by Mr. W. A. T. Kellow near Taiping in the Federated Malay States are just like small ones of *Otocompsa*. The nests were all in low bushes and contained two or three eggs which measured about 20·4 × 15·4 mm. They seem to breed in April, May and June.

Habits. Davison found them either singly or in pairs on the outskirts of forest or in deserted clearings. He remarks:—"They live, so far as have been observed, entirely upon small berries of various sorts. They are rather shy, and on being alarmed beat a hasty retreat to the forest and other dense cover. Their note is a sharp, lively chirrup." Mr. Kellow found them very common about Taiping and apparently took many nests there.

(433) Pycnonotus luteolus.

The White-browed Bulbul.

Hæmatornis luteolus Less., Rev. Zool., 1840, p. 354 (India, Bombay).
Pycnonotus luteolus. Blanf. & Oates, i, p. 290.

Vernacular names. *Poda-pigli* (Tel.); *Guluguluwa* (Ceylon).

Description. Upper plumage dull olive-green, tinged with ashy on the head and with fulvous on the rump and upper tail-coverts; wings and tail brown, washed with green on the outer webs of the feathers; front of forehead, a broad streak from the nostril over the eye and partly over the ear-coverts and an indistinct ring round the eye, white; lores mingled black and white; a stripe from the base of the lower mandible and the point of the chin yellow; lower plumage ashy, tinged and faintly striped with pale yellow, the breast washed with brown; vent and under tail-coverts pale yellow; under wing-coverts and edge of wing yellow.

Colours of soft parts. Iris blood-red; bill blackish or horny-black; legs dark plumbeous.

Measurements. Length about 200 mm.; wing 72 to 89 mm.; tail about 80 to 85 mm.; tarsus about 22 mm.; culmen 15 to 17 mm.

Ceylon birds are certainly smaller than those from India; the wings run from 72 to 83, rarely to 85 mm., those from Travancore northwards measure from 85 to 89 mm. I can see no corresponding variation in colour and as they overlap in measurements, these alone seem hardly well-defined enough to constitute a separate subspecies.

Distribution. The Peninsula of India, from Baroda on the West and Midnapore on the East down to Cape Comorin; Ceylon. Rare or absent on the Deccan table-land and throughout the Central Provinces.

Nidification. This bird breeds very commonly in Ceylon, the West coast of South India and again in West Bengal and parts of Orissa. The nest is not, I think, distinguishable from that of *Otocompsa* but is on the average more untidy, flimsy and unfinished. The sites selected are low, thick bushes in scrub-jungle, the outskirts of forest and partly cultivated country and the nest is seldom more than 4 feet from the ground. Hume says the eggs are *unlike* those of *Molpastes* or *Otocompsa*. Whilst, however, richly marked, handsome eggs such as are so often obtained of *Molpastes* are very rare in this species, the eggs as a series are like weakly marked, rather long-shaped eggs of that bird. Normally only two eggs are laid, sometimes three, and the average of sixty eggs is 22·9 × 15·8 mm., the extremes being **25·5** × 15·6, 24·6 × **17·0**, **19·0** × 15·6 and 23·8 × **15·0** mm.

The birds lay in almost every month of the year in Ceylon but chiefly in February and March, whilst in Bombay they lay from April to July.

Habits. The White-browed Bulbul is a bird neither of actual forest nor of compounds and gardens. It prefers scrub- and bush-jungle, thin rather than dense, the outskirts of forest and country which is partly cultivated and partly wooded. It does not enter gardens but may be seen in the vicinity of villages. It is found only in the plains and lower hills.

Pycnonotus plumosus.

The birds of this species are spread over a very wide area through East and South Burma, the Malay Peninsula and many of the islands and again East through Siam, Yunnan, Annam, etc. There are three races separable but they do not occupy very well-defined areas and it is not easy to say exactly where *P. p. blanfordi* and *P. p. plumosus* meet. Between *P. p. robinsoni* and *P. p. plumosus* I cannot fix anything definite but throughout the Northern Peninsula they probably represent Eastern and Western races. They may eventually have to be treated as species.

Key to Subspecies.

A. Ear-coverts brown with silvery-white stripes. *P. plumosus plumosus*, [p. 419.
B. Ear-coverts entirely silvery-white.
  a. Paler both above and below . . . . *P. p. blanfordi*, p. 420.
  b. Darker both above and below . . . . *P. p. robinsoni*, p. 420.

(434) Pycnonotus plumosus plumosus.

The Large Olive Bulbul.

Pycnonotus plumosus Blyth, J. A. S. B., xiv, p. 567 (1845) (Singapore); Blanf. & Oates, i, p. 292.

Vernacular names. None recorded.

Description. Forehead and crown dark greyish brown, each feather margined with olive-green; wings and tail dark brown, the outer webs of the feathers washed with bright olive-green; lores dark brown; cheeks and chin dull whity-brown; ear-coverts dark brown with silvery-white shafts; lower plumage ashy-brown, slightly mottled and streaked with dull ochraceous; under wing- and tail-coverts and edge of wing brighter ochraceous.

Colours of soft parts. Iris burnt sienna-brown to dark cinnabar-red; bill almost black; legs and feet reddish brown, darker in some, paler in others (*Hume*).

Measurements. Length about 190 to 200 mm.; wing 78 to 89 mm.; tail about 84 mm.; tarsus about 19 to 20 mm.; culmen about 15 to 16 mm.

Distribution. It is extremely difficult to define the boundaries between this bird and the next, *P. p. robinsoni*. It appears that the present bird is found in the South of the Malay Peninsula in Johore, Pahang, Perak, Keda and thence up the West coast of Tenasserim as far North as Tenasserim Town and also in Sumatra and Borneo, whilst Robinson's Bulbul works North from Patani up the East coast.

Nidification. Nests taken by Davison, Kellow and Waterstradt were of the ordinary Bulbul type built low down in bushes generally in thin forest, sometimes in fairly dense forest but not, apparently, in cultivated and village areas. The eggs are two or three in number, most often the former, and one clutch in the Waterstradt collection was a five, but this must be quite exceptional. The eggs are like those of the rest of the genus and it is doubtful if any of these can be distinguished from one another except, perhaps, by size. Ten eggs average about 22·0 × 17·7 mm. but Davison's eggs seem to be abnormally big. Six of my own only measure 21·8 × 16·1 mm.

This speci.s breeds in February, March and April.

Habits. This Bulbul is a bird of forests rather than of open country and Mr. Kellow informed me that he took the nests in almost impenetrable cane-brakes along streams in virgin forest. They are quite unobtrusive birds, keeping to the lower trees and bushes and having a chirping chatter, according to Davison, like that of *Criniger*. They feed chiefly on berries.

(435) Pycnonotus plumosus robinsoni.

ROBINSON'S OLIVE BULBUL.

Pycnonotus robinsoni Ogilvie-Grant, Fasciculi Malay., p. 85 (1905) (Patani, Malay Pen.).

Vernacular names. None recorded.

Description. Differs from *P. plumosus* "by having more distinct white shaft-streaks to the feathers of the cheeks and ear-coverts; the outer edges to the quills dull greenish, not olive-green, and the middle of the breast and belly pale yellowish white."

This form is nearest to *P. p. blanfordi*, from which it is separable by its much darker plumage above and below.

Colours of soft parts. Iris brown; bill brownish-horn; legs and feet blackish-lead.

Measurements. Much the same as those of *P. p. plumosus*. Wing 83 to 89 mm.: culmen about 15 mm.

Distribution. From Patani in the extreme South of Peninsular Siam, up the East Coast, perhaps entering the borders of Tenasserim near Tavoy, as far North as Ayuthia, Natrang and Kraben. There are also specimens in the British Museum collection from Annam.

Nidification. Messrs. Williamson and Herbert collected and examined vast numbers of nests and eggs of this Bulbul round Bangkok, where it is exceedingly common. They are quite indistinguishable from others of this genus but when considered as a whole are very poorly marked, pale eggs with none of the rich variations seen in so many Bulbuls' eggs. 100 eggs average 21·6 × 15·6 mm., the extremes being 23·0 × 16·2, 22·2 × 16·7 and 20·1 × 15·1 mm.

The birds breed in light and heavy forest and also in scrub and bushes round about cultivation and villages. Out of 76 clutches examined by Mr. W. Williamson only four nests contained three eggs, the rest only two each. The breeding season is from January to July.

Habits. They are very familiar birds, far more so than the Large Olive Bulbul, and freely enter gardens, orchards and cultivated country. In winter they are found in small flocks and are restless, energetic birds, constantly flying from one tree to another in search of their food, which consists of berries and insects.

(436) Pycnonotus plumosus blanfordi.

BLANFORD'S OLIVE BULBUL.

Pycnonotus blanfordi Jerdon, Ibis, 1862, p. 20 (Pegu); Blanf. & Oates, i, p. 291.

Vernacular names. *Byu*, *Bo-sa-mwe* (Burmese); *Bo-sa-mwe* (Kachin).

Description. Differs from Robinson's Olive Bulbul in being

much paler and with ear-coverts wholly silvery-white. It is much less green both on upper plumage and on wings and tail than *plumosus*.

Colours of soft parts. Iris varies from yellowish brown to red; eyelids plumbeous; bill brown, paler at base of lower mandible and gape; mouth flesh-colour; legs plumbeous, claws horn-colour.

Measurements as in the other races. Wing 85 to 89 mm.; culmen about 15 mm.

Distribution. Practically the whole of Burma, North of Rangoon, the Kachin Hills, North and Central Siam, Shan States and Annam.

Nidification. Similar in every way to that of the last bird. Eggs and nests are indistinguishable and the clutches are the same in number, *i.e.* two or three. As a series they are even more poorly marked than those of Robinson's Olive Bulbul. Forty eggs average 20·6 × 15·7 mm.

The breeding season must be very extended, as eggs have been sent me taken from early March to late August and, probably, like most of the common Bulbuls, they breed more or less throughout the year.

Habits. Those of the last bird. They are said to have a very harsh note when disturbed and like all Bulbuls under these circumstances, erect their crests as they make the call.

(437) Pycnonotus simplex simplex.

MOORE'S OLIVE BULBUL.

Pycnonotus simplex Less., Rev. Zool., 1839, p. 167 (Sumatra); Blanf. & Oates, i, p. 292.

Vernacular names. None recorded.

Description. Upper plumage brown with a greenish tinge, slightly fulvous on the rump and upper tail-coverts; wings and tail brown, the outer webs washed with greenish; whole lower plumage buffy-brown, slightly streaked in places with darker ochraceous; under tail-coverts dark ochraceous with paler edges; under wing-coverts and edge of wing pale ochraceous.

Colours of soft parts. Iris orange-red, pale red, whity-pink; upper mandible dark horny-brown, lower mandible paler; legs and feet fleshy- or reddish-brown.

Measurements. About the same as *plumosus*. Wing 80 to 88 mm.; culmen about 15 mm.

Distribution. Tenasserim, from Mergui, South through the Malay Peninsula to Sumatra. The Javan form has been separated by Hartert (Nov. Zool. ix, 1902, p. 561) as *P. prillwitzi* and the Bornean form also seems different from the Malay bird.

Nidification. Nests and eggs taken by Mr. Kellow at Simpang in the Malay States were, like those described by Davison, taken in thick jungle in high bushes. They are rather more richly

coloured than those of the two preceding species and they measure about 21·0 × 15·9 mm. Mr. Kellow's eggs were taken in January, February and April.

Habits. Those of the genus but this species is a bird of thin forests and does not haunt cultivated or inhabited areas.

(438) Pycnonotus erythropthalmus erythropthalmus.*

THE SMALL OLIVE BULBUL.

Ixos erythropthalmus Hume, S. F., vi, p. 314 (1878) (Pakchan, S. Tenasserim).

Pycnonotus pusillus. Blanf. & Oates, i, p. 293.

Vernacular names. None recorded.

Description. The whole upper plumage and wing-coverts olive-brown, tinged with rufescent on the rump and upper tail-coverts; tail rufescent-brown; wings brown, the visible portions suffused with olive; lores and sides of the head ashy-brown; chin and throat ashy-white; breast and sides of the body ashy-brown washed with fulvous; abdomen, vent and under tail-coverts dusky yellow; under wing-coverts and axillaries pale ochraceous yellow.

Colours of soft parts. Iris crimson, an ophthalmic ring vivid orange-yellow but this withers away in skins and is not discernible; bill black, gape and base of lower mandible and nostrils orange-yellow; legs, feet and claws pale reddish-horny.

Measurements. Length about 165 mm.; wing 70 to 78 mm.; tail about 75 mm.; tarsus about 15 to 16 mm.; culmen about 13 to 14 mm.

Nidification and **Habits.** According to Davison this Bulbul differs in no way from the various races of *P. plumosus*.

The few eggs of which measurements have been obtainable measure about 21·0 × 15·9 mm., but a larger series would certainly give a smaller average for the eggs of this small bird.

Genus MICROTARSUS Eyton, 1839.

The genus *Microtarsus* may be recognized by its very ample and lengthened tail-coverts, rounded tail and the extraordinary development of the feathers of the lower back and rump, which are moreover barred with black; in this respect *Microtarsus* shows great affinities to *Pinarocichla*.

In this genus the feathers of the head, though erectile, are exceedingly short and glossy. The bill is about half the length of the head, and the rictal bristles are well-developed. The tarsus is very short but fairly stout. The plumage of all the known species is very pleasing.

---

* Sharpe shows that *P. pusillus* of Salvadori, 1874, is preoccupied by Gray, Genera Birds, i, p. 237, and cannot be used. He therefore proposes (Cat. B. M., 1881, Appendix, p. 401), *P. salvadorii*, but though this stands as the name for the Sumatran race, *erythropthalmus* of Hume has priority as the specific name.

Of the three species found within our limits it is extremely difficult to decide what relationship *M. m. melanocephalus* and *M. cinereoventris* bear to one another. It is true the former is often found in flocks with no individual of the latter but neither Mr. H. A. Hole, who knew this bird very well, nor I myself have ever seen a flock of the latter without some of the former. The plumage of the Grey-breasted Bulbul is merely that of the Black-headed Bulbul with the yellow eliminated on some portions and this in varying degree. One of Lord Tweeddale's birds is described by him as being "in a stage of transition from yellow to grey." A specimen in the collection of Mr. Hole showed traces of green on the hind-neck but was otherwise of purely *cinereoventris* type; a third, a young male shot by myself, appears also to be in a transition stage between the two forms. I expect, when the necessary evidence is obtainable, the two will be found to be one and the same bird. Age and sex have nothing to do with the matter, but no one has yet been able to prove that they breed together, however closely they may accompany one another in the non-breeding season.

Key to Species and Subspecies.

A. Lower plumage yellow or olive-yellow.	[*cephalus*, p. 423.
a. Head entirely black	*M. melanocephalus melano-*
b. Head above bluish grey.	
a'. Upper tail-coverts yellow	*M. m. fusciflavescens*, p. 425.
b'. Upper tail-coverts bluish grey .	*M. poiocephalus*, p. 425.
B. Lower plumage bluish grey	*M. cinereoventris*, p. 426.

(439) Microtarsus melanocephalus melanocephalus.

The Black-headed Bulbul.

Lanius melanocephalus Gmel., S. N., i, p. 309 (1788) (Sandwich in mares australis).

Micropus melanocephalus. Blanf. & Oates, i, p. 294.

Vernacular names. *Dao-bulip-garasha* (Cachari).

Description. Whole head, throat and upper breast black, glossed with blue and purple; remainder of upper plumage olive-yellow, brighter on the rump and yellow on the upper tail-coverts; breast and flanks the same, shading into bright yellow on the abdomen and under tail-coverts; tail olive-yellow for half its length, then black and tipped with yellow, narrowly on the centre feathers and increasingly broadly on the others; primary-coverts dull black, narrowly edged with olive-yellow, other coverts wholly of this colour on the outer webs; primaries and outer secondaries black, the first obsoletely, the latter broadly, edged with olive-yellow; the visible inner secondaries all olive-yellow; the feathers of the rump and upper tail-coverts are very dark grey at the base and then black, the tips alone being broadly yellow so that the rump nearly always appears barred with black, though in a perfect specimen the rump looks almost immaculate yellow.

Colours of soft parts. Irides various shades of pale blue; bill very dark plumbeous, nearly black; mouth and gape bluish, sometimes tinged fleshy; legs dark plumbeous, claws black.

Measurements. Length about 175 mm.; wing 80 to 86 mm.; tail about 84 mm.; tarsus about 13 mm.; culmen about 13 to 14 mm.

Distribution. Assam, South of the Brahmaputra and Eastern Bengal hill-tracts, Arrakan, Chin Hills, practically the whole of Burma, Shan States, Siam and the whole Malay Peninsula to Sumatra, Java, Borneo and the Philippines.

Nidification. This Bulbul breeds round Amherst from February to April and in North Cachar in May, making a very strongly-built cup-shaped nest, which it places in low bushes in evergreen, humid forests from the level of the plains up to 2,000 or 3,000 feet. The materials of the nests I have personally seen have consisted principally of the tough but fine stems of a wild bean. With these are twigs, dead leaves and grass blades and the whole is securely wound round the supporting twigs. The lining is of skeleton leaves and grass stems. The eggs number two or three and, like all those of this genus, are easily distinguished from other Bulbuls' eggs. The ground-colour is a pale fleshy-pink to a lilac-pink and the primary markings consist of freckles, specks and small blotches of pale reddish, whilst the secondary, or underlying, markings are of pale grey or pale lilac neutral tint. The latter markings are generally more numerous than the former and give the dominant tint to the egg. Some eggs have the marks so fine and so numerous that they look unicoloured but most eggs have them more numerous at the big end than elsewhere, forming a pronounced ring or cap. The average of seven of my own eggs and six of Mr. J. M. D. Mackenzie's is 20·5 × 15·5 mm. and the extremes are **23·0** × **16·6**, **19·0** × 15·5, and 20·5 × **15·0** mm. The surface is fine and glossy and the shell fragile. In shape they vary as much as the eggs of *Otocompsa* and *Molpastes*.

Habits. This is a purely forest Bulbul, though in the cold weather it may be found in small or big flocks feeding on trees well away from forest, especially when these are in flower and attracting many insects. It prefers scattered forest or light jungle and was most common in the ravines running from the foot-hills into the plains of Cachar and Sylhet. These ravines were heavily forested, running between grass-covered hills and light forest where the birds came out to feed in the mornings and evenings. It keeps almost entirely to the tops of high trees in the cold weather but in the breeding season descends to the smaller trees and undergrowth. Their ordinary note is a musical chirp but they also have a very mournful double whistle like the rainy-weather call of the Iora, but deeper and softer. They feed principally on berries and fruit but also eat small

insects and I have shot specimens feeding on the cotton-trees over-full of such obtained from their great red flowers.

In most flocks of this birds one or more specimens will be found of the Grey-bellied Bulbul.

(440) Microtarsus melanocephalus fusciflavescens.

THE ANDAMAN BLACK-HEADED BULBUL.

Brachypodius fusciflavescens Hume, S.F., i, p. 297 (1873) (Andamans).
Micropus fusciflavescens. Blanf. & Oates, i, p. 295.

Vernacular names. None recorded.

Description. Differs from the preceding bird in having the whole head dusky olive-green; the black on chin and throat is confined to the centre of the latter; the black bars are narrower and the abdomen and under tail-coverts are a still brighter yellow.

Colours of soft parts. Iris bluish-white to pale blue; bill bluish-slate to slaty-black; legs and feet plumbeous.

Measurements as in the preceding bird.

Nidification unknown.

Habits. Davison found it singly or in pairs on the outskirts of forest, edges of jungle-tracts and natural openings.

(441) Microtarsus poiocephalus.

THE GREY-HEADED BULBUL.

Brachypus poiocephalus Jerdon, Madr. J. L. S., x, p. 246 (1830) (Travancore).
Micropus phæocephalus. Blanf. & Oates, i, p. 296.

Vernacular names. None recorded.

Description. Forehead olive-yellow; chin blackish; cheeks greyish yellow; remainder of head clear bluish grey; upper side of neck, back and scapulars olive-green; rump-feathers black with broad yellow tips; upper tail-coverts and four middle tail-feathers bluish grey with dark shafts, the others black, broadly edged on both webs and tipped with bluish grey, the basal two-thirds of all suffused with olive-green; wings black, all the feathers edged with olive-green, the outer webs of the innermost secondaries being wholly of this colour; breast, abdomen and flanks oil-yellow; under tail-coverts bluish grey.

Colours of soft parts. Iris almost white to blue; bill pale slate, "pale green" (*Davison*); legs and feet fleshy tinged with orange (*Davison*).

Measurements. Rather smaller than *M. melanocephalus*; wing about 73 to 78 mm.

Distribution. Malabar coast; from Belgaum to South Travancore; Coonoor and Wynaad Hills.

Nidification. The Grey-headed Bulbul makes a small, compact cup-shaped nest, which it places in low bushes in fairly dense jungle. The eggs are like those of *M. m. melanocephalus* and ten

eggs taken by Stewart and Bourdillon in Travancore and by Bell in Kanara average 21·9 × 15·6 mm. and vary in length between **21·0** × 15·9 and **22·3** × 16 mm. and in breadth between 21·2 × **15·0** and 22·3 × **16** mm.

The birds of this species often lay one egg only, single eggs quite hard-set having been taken by Mr. J. Stewart in Travancore.

Habits. Those of the genus. It is found from the level of the plains up to some 2,000 feet.

(442) Microtarsus cinereoventris.

THE GREY-BELLIED BULBUL.

Brachypodius cinereoventris Blyth, J. A. S. B., xiv, p. 576 (1845) (Tippera).
Micropus cinereiventris. Blanf. & Oates, i, p. 295.

Vernacular names. *Dao-bulip-garaju* (Cachari).

Description. This bird differs from *M. m. melanocephalus* in having the breast, upper part of the abdomen, hind-neck and sometimes the upper back bluish grey instead of yellow or green.

Colours of soft parts and **Measurements** as in that bird.

Distribution. The same also as in that bird but apparently not extending to Siam, Annam, or Sumatra and the other islands.

Nidification and **Habits** exactly the same as those of the Black-headed Bulbul. It is generally found in company with flocks of the Black-headed birds and, as far as my experience goes, never by itself, though every flock of the former may not necessarily contain any of these with grey abdomens. The Cachari names for *M. melanocephalus* and *M. cinereoventris* mean male and female of the same species but, as I have already shown, the difference is not one of sexes though the two birds are probably dimorphic forms of the same species. Two pairs of eggs in my collection measure 21·4×15·4 ; 21·0×15·1 and 23·4×16·1 ; 22·4×17·0 mm. The latter appear very large for the size of the bird.

Genus KELAARTIA Blyth (*fide* Jerdon), 1863.

The single species of *Kelaartia* is peculiar to Ceylon. It is characterized by the curious pointed feathers constituting the supercilium and by the rounded feathers of the crown, the two forming a striking contrast.

The tarsus in this genus is rather longer than is usual in the Bulbuls, but it does not exceed in length the middle toe and claw.

(443) Kelaartia penicillata.

THE YELLOW-EARED BULBUL.

Pycnonotus penicillatus Blyth, J. A. S. B., xx, p. 178 (1851) (Ceylon).
Kelaartia penicillata Blanf. & Oates, i, p. 297.

Vernacular names. None recorded.

Description. Forehead and crown dark brown or blackish, each feather very narrowly edged with ashy; a narrow white line from the nostril to the upper part of the eye and a broad yellow streak from that point to the nape; chin and upper part of cheeks white; lores, ear-coverts and lower part of cheeks black, the ear-coverts with a streak of yellow down the middle; a large slaty-blue spot on the neck next the ear-coverts; upper plumage olive-green; wings and tail dark brown, the outer webs of the feathers washed with olive-green; the whole lower plumage, except the chin, deep yellow, washed with olive on the breast and flanks; under wing-coverts and edge of wing yellow.

Fig. 82.—Head of *K. penicillata*.

Colours of soft parts. Iris bright red, reddish brown or carmine; bill black; legs and feet dark plumbeous or dark bluish plumbeous.

Measurements. Length about 190 mm.; wing 80 to 85 mm.; tail about the same; tarsus about 20 mm.; culmen about 15 mm.

Distribution. Ceylon only.

Nidification. This bird breeds in March and April, perhaps also in other months, between the foot-hills and about 4,000 feet. It makes a cup-shaped nest, rather shallow and flimsy, of dead leaves, twigs and grass, which it suspends between a vertical fork of an outer branch of some small sapling or high bush in the forest. The eggs, which are always two in number, are like richly-coloured eggs of *Iole icterica*, that is to say the ground-colour is pale pink and they are profusely covered all over with tiny longitudinal specks of pale pinkish red with a few underlying ones of pale lavender. Six eggs measure 22·3 × 16·8; 21·8 × 17·0; 24·2 × 16·7; 23·6 × 16·3; 24·0 × 16·1; 23·2 × 16·0 mm.

Habits. The Yellow-eared Bulbul is found principally in forests, ascending as high as 7,000 feet but being most numerous between 2,000 and 4,000 feet. According to Legge it keeps to low jungle and underwood rather than to the higher trees, is restless and shy, yet inquisitive and has a note which he describes as "whee whee, whee," quickly repeated. It is more a fruit- and seed-eater than insectivorous but indulges sometimes in the latter diet.

Family CERTHIIDÆ.

The intrinsic muscles of the syrinx fixed to the ends of the bronchial semi-rings; the edges of both mandibles smooth or with a simple notch on the upper one; hinder aspect of the tarsus bilaminated, the laminæ entire and smooth; wing with ten primaries and tail with twelve rectrices; tongue non-tubular; nostrils clear of the line of forehead, the space between the nostril and the edge of the mandibles less than the space between the nostril and the culmen; plumage of the young like the adult female, but paler; nostrils bare; rictal bristles absent; the wing is generally long or rather long and pointed and the tarsus is very short, the feet being unusually large and strong with long powerful toes and claws.

Whereas most authors have given the *Certhiidæ*, or Tree-Creepers, a definite family by themselves, others have united them with the *Troglodytidæ* or Wrens, whilst others again have united the latter with the *Timaliidæ* or *Turdidæ*.

Undoubtedly the Wrens and the *Certhiidæ* are very closely allied, their strong feet and the entire absence of rictal bristles being the most conspicuous characters held in common. On the other hand, the longer wings of the *Certhiidæ* together with their short tarsi seem to separate them sufficiently distinctly from the short, rounded winged *Troglodytidæ* with their much longer tarsi.

The *Certhiidæ* are found over a considerable portion of the world and are represented in India by three genera; of these one possesses the typical stiff, pointed tail-feathers and two have soft, rounded tail-feathers as in the Wrens.

Key to Genera.

A. Tail composed of stiff, pointed feathers .... CERTHIA, p. 428.
B. Tail composed of soft, rounded feathers.
  a. First primary not more than a quarter the length of the second .... SALPORNIS, p. 439.
  b. First primary about half the length of the second .... TICHODROMA, p. 441.

Genus **CERTHIA** Linn., 1766.

The genus *Certhia* contains four Indian species which are, however, divisible into many geographical races. They are resident in the Himalayas and higher hills of Burma, moving vertically to some extent under varying conditions of temperature.

Certhia has only a single moult, in the autumn, Biddulph's opinion that *C. himalayana* had both a spring and autumn moult being undoubtedly incorrect.

The young are coloured like the adult but have signs of cross-bars on the lower plumage, especially on the sides of the breast and flanks, and are somewhat paler and duller.

In *Certhia* the bill is as long, or nearly as long, as the head, slender and curved downwards. The nostrils are long, narrow slits. The tarsus is scutellated and the toes and claws are extremely long.

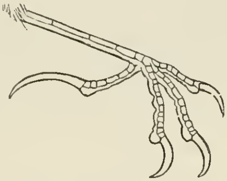


Fig. 83.—Foot of *Certhia*.

The wing is rounded, the first primary being about half the length of the second, and the third a little shorter than the second. The tail and wing about equal in length and the former is composed of twelve very stiff pointed feathers and greatly graduated.

Key to Species.

A. Tail distinctly cross-barred .... *C. himalayana*, p. 429.
B. Tail without bars or with only faint ones.
  a. Chin, throat and breast white; under tail-coverts fulvous .... *C. familiaris*, p. 432.
  b. Whole lower plumage earthy-brown .... *C. discolor*, p. 435.
  c. Chin and throat white, remainder of lower plumage deep ferruginous .... *C. stoliczkæ*, p. 438.

Certhia himalayana.

Certhia himalayana is represented in India by four well-marked races, and is found from Baluchistan and Afghanistan to Yunnan and the Shan States. It is easily distinguished from all other forms of Tree-Creeper by its boldly barred tail.

Key to Subspecies.

A. Upper plumage blackish brown, strongly suffused with ferruginous on the rump and upper tail-coverts.
  a. Darker above; abdomen and flanks pale smoky-brown tinged with fulvous .. *C. h. himalayana*, p. 430.
  b. Paler above; abdomen and flanks pale smoky-brown with no tinge of fulvous. *C. h. tæniura*, p. 431.
B. Upper plumage very dark, slightly tinged with rufous on rump .... *C. h. intermedia*, p. 432.
C. Upper plumage with no tinge of rufous.. *C. h. yunnanensis*, p. 432.

(444) Certhia himalayana himalayana.

THE HIMALAYAN TREE-CREEPER.

Certhia himalayana Vigors, P. Z S., 1831, p. 174 (Himalaya); Blanf. & Oates, i, p. 329.

Vernacular names. *Chua-sorai* (Assamese).

Description. Upper plumage and wing-coverts blackish brown, the feathers broadly centred fulvous; lower back, rump, and upper tail-coverts strongly tinged with ferruginous: tail pale reddish brown, regularly barred with black; a well-developed supercilium pale fulvous; ear-coverts black; wings dark brown, all the quills except the first three or four with a broad oblique fulvous band bordered with black; chin and throat pure white; remainder of under plumage pale smoky-brown tinged strongly with fulvous.

Colours of soft parts. Iris dark brown; upper mandible dark horny-brown or blackish, the lower mandible fleshy-horny; legs and feet fleshy, claws a little darker.

Measurements. Length about 140 mm.; wing 65 to 71 mm.; tail 59 to 67 mm.; tarsus about 18 mm.; culmen 15 to 22 mm. The bill varies very greatly, males generally vary between 19 and 21 mm. and females between 17 and 20 mm., but other birds of both sexes, possibly young birds though in adult plumage, have bills of 15 and 16 mm.

The young in this, as in all other *Certhias,* have the lower plumage mottled and with indications of bars.

Distribution. South Kashmir, most of the North-West Himalayas, Garhwal, Nepal, Sikkim, Bhutan to W. Assam.

Nidification. The Himalayan Tree-Creeper breeds throughout its range between 5,000 and 9,000 feet or even higher. It is an early breeder. Dodsworth took several nests at Simla in April and few birds breed later than May, during which month Rattray, Buchanan and others found many nests round about the Murree Hills. It builds, like most Tree-Creepers, either in a crevice of a tree or in between a loose bit of bark and the trunk, the latter being the favourite position. The nest is made of a little grass or moss, often with a foundation of dead leaves, chips of wood, etc. and always with a lining of fur, wool or feathers. It may be placed at any height from the ground, from 10 to 50 feet.

The eggs number four to six and have a white ground, generally tinged with pink and are profusely spotted all over with light to dark brownish-red or pinkish-red. A few eggs have the ground pure white and the marks of dark reddish-brown in a ring round the larger end. Fifty eggs average 15·8 × 12·2 mm. The maxima are **17·6** × 12·4 and 16·3 × **12·9** mm. and the minima **14·7** × 11·9 and 14·9 × **11·8** mm. The shape is a fairly broad oval and the texture is fine but glossless.

Habits. This Creeper may be rarely found as low as 4,000 feet in winter and in summer ascends to some 10,000 feet. It is, of

course, only found in heavily-forested areas but it does not keep entirely to the interior of forest, wandering freely into the more open country wherever there are large trees forming suitable hunting-grounds. They are intensely active, restless little birds, never still for a minute, scuttling hither and thither, now racing over the trunk of the tree, now scrambling along the under surface of one of the smaller boughs. They, unlike the Woodpeckers and Barbets, are just as fond of running down as running up the trunks of trees, but their general method is to work a tree upwards before taking flight to the next. Their ordinary note is a very feeble little squeak, which develops into a louder, fuller series of notes in the breeding season.

They are entirely insectivorous.

(445) Certhia himalayana tæniura.*

THE TURKESTAN TREE-CREEPER.

Certhia tæniura Severtz., Turk. Jevotn., p. 138 (1873) (Turkestan).

Vernacular names. None recorded.

Description. This race differs from the preceding bird in being much paler, more brown, less black; the under parts, except the chin and throat, are all smoky-brown with no tinge of fulvous.

Colours of soft parts as in the Himalayan Tree-Creeper.

Measurements. Wing 65 to 73 mm.; tail about 52 to 65 mm.; tarsus about 18 mm.; culmen about 18 to 21 mm. Blanford remarks that *tæniura* has a much longer bill than *himalayana*; the British Museum series does not confirm this.

Distribution. Turkestan, Afghanistan, Baluchistan, Gilgit, North and Central Kashmir, Chitral, Karam Valley, etc.

Nidification. The Turkestan Tree-Creeper is found breeding between 5,000 and 12,000 feet over all the mountains of extreme North-West India. Whitehead found it breeding in some numbers in the Safed Koh up to 9,000 feet and in North Kashmir it breeds in great numbers up to 10,000 feet. The nest differs in no way from that of the Himalayan Tree-Creeper and the eggs cannot be distinguished from those of that bird. Forty eggs average 15·9 × 11·9 mm. and the extremes of length and breadth are **17·5 × 12·3** mm. and **14·9 × 11·3** mm.

It breeds later than the preceding bird, most eggs being laid during the first week in June or the last few days of May.

---

* Meinertzhagen has recently separated another form as intermediate between *himalayana* and *tæniura* under the name of *miles* (Bull. B. O. C. xlii, June, 1922). It is true that the birds from Central Kashmir and N.W. India are somewhat intermediate between the two but the great majority seem to me to be easily referable to one or the other race and a third race appears to be unnecessary, for on the dividing lines of all subspecies intermediate birds must occur. Meinertzhagen is wrong in crediting *tæniura* with a longer culmen than *himalayana*.

Habits. Those of the genus. Whitehead says:—"The call note is a faint squeak, rarely heard in winter. In summer its loud but rather monotonous song is constantly uttered. It does not by any means restrict itself to trees. I have often noticed it climbing up walls."

This Tree-Creeper is found up to 12,000 feet in summer but, on the other hand, in winter descends to 4,000 feet or lower still in the Afghanistan and Baluchistan Hills.

(446) Certhia himalayana yunnanensis.

THE YUNNAN TREE-CREEPER.

Certhia yunnanensis Sharpe, Bull. B.O.C., xiii, p. 11 (1902) (Yunnan).

Vernacular names. None recorded.

Description. Similar to *C. h. himalayana* but with the whole upper plumage very black without any ferruginous tint. Below it is dull smoky-grey, albescent on the chin and throat.

Colours of soft parts not recorded. In the dry skin they do not differ from the same parts in typical *himalayana*.

Measurements. Wing 68 to 71 mm.; tail 58 mm.; tarsus 17 to 18 mm.; culmen 19 to 20 mm.

Distribution. Yunnan and Northern Shan States.

Nidification unknown.

Habits. This bird was found by Rippon to be fairly numerous at heights varying between 7,000 and 9,000 feet in Yunnan.

(447) Certhia himalayana intermedia.

THE CHIN HILLS TREE-CREEPER.

Certhia himalayana intermedia Kinnear, Bull. B. O. C., xli, p. 139 (1921) (Mt. Victoria).

Vernacular names. None recorded.

Description. Similar to the Yunnan Tree-Creeper but with a distinct rufous tinge on the rump and lower back. It is closer to this last Tree-Creeper than to the Himalayan bird.

Colours of soft parts are apparently the same as in *himalayana*.

Measurements. Wing 65 to 73 mm.; tail 55 to 72 mm.; tarsus 16 to 17 mm.; culmen 17 to 19 mm.

Distribution. Chin Hills only so far as is known at present.

Nidification and **Habits.** Nothing recorded.

Certhia familiaris.

In India we have three races representative of the Common European Tree-Creeper which are found from North-West India to South-East Tibet and North-East Kachin Hills.

Key to Subspecies.

A. Upper plumage dark brown; lower back and rump ferruginous . . . . *C. f. nipalensis*, p. 433.
B. Darker above; with very little ferruginous on back or rump . . . . *C. f. khamensis*, p. 434.
C. Paler above; only a tinge of fulvous on the lower back and rump . . . . *C. f. hodgsoni*, p. 434.

(448) Certhia familiaris nipalensis.

THE NEPAL TREE-CREEPER.

Certhia nipalensis Blyth, J. A. S. B., xiv, 2, p. 581 (1845) (Nepal); Blanf. & Oates, i, p. 330.

Vernacular names. *Dao-mojo* (Cachari); *Inrui-m-jet* (Naga).

Description. Upper plumage and wing-coverts very dark brown, streaked with bright rufous and with a few additional streaks of blackish and fulvous-white; lower back and rump ferruginous; tail brown faintly tinged with reddish; a fulvous-white supercilium from the nostrils to the nape; lores and ear-coverts mixed brown and rufous; wings brown, the primaries with an oblique band of fulvous edged with black; chin and throat pure white; abdomen, flanks and under tail-coverts fulvous-white.

Colours of soft parts. Iris brown; upper mandible horny brown, lower mandible fleshy horny; legs and feet flesh-colour.

Measurements. Wing 67 to 71 mm.; tail 57 to 76 mm.; tarsus about 18 mm.; culmen 13 to 15 mm.

Distribution. Nepal, Sikkim, Bhutan and hills North and South of the Brahmaputra above 6,000 feet.

Nidification. A nest taken by myself in N. Cachar was composed entirely of scraps of soft green moss, forming a pad fitting into a hollow between a projecting piece of bark and the trunk of a tree at about 25 feet from the ground. There were only three eggs which were taken as I had to leave the place, or doubtless more would have been laid. In colour they are a pure white with tiny spots of reddish, principally in a ring about the larger end. They were taken on the 11th April, 1890 (recorded in error 16th May, Journal B. N. H. S. and 'Ibis'), and measure 17·7 × 13·1 mm. They will possibly eventually prove to be abnormally large, pale eggs but I watched the parent birds for hours previously and am certain of their identity.

Habits. These are in no way different from those of the Himalayan Tree-Creeper. It is found principally between 7,000 and 10,000 feet North of the Brahmaputra and certainly ascends to 12,000 and 13,000 feet during the summer. South of the Brahmaputra it was not very rare either in North Cachar or the Khasia Hills at 6,000 feet, being found as low as 5,000 feet. It is essentially a bird of pine and fir forests but I found it also

in mixed oak and rhododendron and, though I failed to find its nest, it certainly bred in the latter in the Khasia Hills. Its voice is a very Bat-like little squeak but I have never heard its song.

(449) Certhia familiaris khamensis.

The Tibetan Tree-Creeper.

Certhia khamensis Bianchi, Sharpe, Hand-l. B., iv, p. 355, description p. 360 (1893).

Vernacular names. None recorded.

Description. This race is near to the preceding but the upper plumage is still darker and has less rufous; on the under parts the breast is more white and the abdomen, flanks and under tail-coverts are pale smoky-brown instead of fulvous.

Colours of soft parts as in the preceding bird.

Measurements. Wing about 69 to 70 mm.; tail 65 to 68 mm.; tarsus 18 mm.; culmen considerably longer than in *nipalensis*, measuring about 17 to 18 mm.

Distribution. South-East Tibet. Eggs of a Creeper sent me from the Chambi Valley, South Tibet, may be either of this or the preceding form. The record of the Nepal Tree-Creeper from the extreme North-East of the Kachin Hills (*Harington*) is almost sure to refer to this bird.

Nidification and Habits. Nothing known.

(450) Certhia familiaris hodgsoni.

Hodgson's Tree-Creeper.

Certhia hodgsoni Brooks, J.A.S.B., xli, p. 74 (1872) (Kashmir); Blanf. & Oates, i, p. 329.

Vernacular names. None recorded.

Description. This Tree-Creeper differs from both the other Indian races of this species in being much paler above; the rufous tinge is absent but the rump and upper tail-coverts have a wash of fulvous; below it is almost entirely white, with merely a tinge of fulvous on the posterior flanks and under tail-coverts.

Colours of soft parts as in the preceding races.

Measurements. This is decidedly the smallest of the three races. Wing 63 to 66 mm.; tail 60 to 61 mm.; tarsus about 17 mm.; culmen about 16 to 18 mm.

Distribution. Garhwal to North-West Kashmir.

Nidification. The nest of this bird was first taken by Captain Cock at Gulmurg in Kashmir and it has also been taken by Rattray, Buchanan and others in Danga Gali and Changla Gali in the Murree Hills. The birds are late breeders; Capt. Cock's nests were

taken in early June and the others between the 18th and the end of that month. The nest is like those of the rest of the genus, a pad of moss, lined with a few feathers and placed high up in a crevice or in between the tree and some projecting piece of bark. The eggs are like those of *himalayana* but apparently vary greatly in size; twenty-five eggs average 15·8 × 11·9 mm. and the greatest length and breadth are **16·8** × **12·6** mm. and the least **14·8** × 11·1 and 15·0 × **11·0** mm.

Habits. This Tree-Creeper seems to be a bird of rather higher elevations than most, never descending below about 7,500 feet in the breeding season and ascending up to 10,000 feet. With this exception there is nothing special calling for remark about it.

Certhia discolor Blyth.

Four races of this species are found within the limits of this work, ranging from Nepal to the extreme east of Burma and the Shan States; these four include one hitherto undescribed but referred to by Oates as being found in Karenni and as being inseparable from the Sikkim bird. Further material, however, shows that when series from the two places are compared one with the other they differ very greatly and can be easily distinguished from one another.

Key to Subspecies.

A. Lower plumage earthy-brown, fulvescent on posterior flanks and abdomen	*C. d. discolor*, p. 435.
B. Lower plumage more fulvous, especially on throat	*C. d. manipurensis*, p. 437.
C. Much darker above; chin, throat and breast reddish fulvous	*C. d. victoriæ*, p. 437.
D. Very dull, with little ferruginous above and no fulvous tint below	*C. d. fuliginosa*, p. 438.

C. d. fuliginosa is not unlike *C. d. meridionalis* Rob. & Kloss, Ibis, 1919, p. 609, but can be distinguished by its paler lower plumage which is more a smoky grey than dark grey and without any tinge of rufous on the belly.

(451) Certhia discolor discolor.

THE SIKKIM TREE-CREEPER.

Certhia discolor Blyth, J. A. S. B., xiv, p. 580 (1845) (Darjeeling); Blanf. & Oates, i, p. 331.

Vernacular names. *Saddyer-pho* (Lepcha).

Description. Upper plumage dark brown, streaked with fulvous; rump and upper tail-coverts bright ferruginous; tail bright reddish-brown with red shafts and obsoletely cross-rayed; wings dark

brown with the usual fulvous, black-edged band across all but the first four primaries; most of the quills tipped with white and the later ones with a fulvous streak near the end of the outer web; lower plumage earthy-brown, paler and fulvescent on the posterior flanks and abdomen; under tail-coverts ferruginous; a cheek-stripe rufous or fulvous-rufous; under wing-coverts and axillaries white.

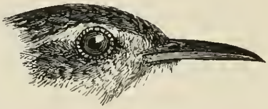


Fig. 84.—Head of *C. d. discolor.*

Colours of soft parts. Iris dark brown to red-brown; bill above dark horny-brown, almost black on culmen, below pale horny; legs and feet pale fleshy-brown or pale brown.

Measurements. Wing 67 to 71 mm.; tail 75 to 77 mm.; tarsus about 18 mm.; culmen 13 to 15 mm.

Distribution. The Himalayas from Nepal to E. Assam, both North and South of the Brahmaputra.

Nidification. The only nests and eggs of this bird recorded appear to be those taken by myself in North Cachar and the Khasia Hills. In these hills I found the bird very rare and breeding only in the stunted oak forest in the former district and in pine-woods in the latter. In neither case did they breed below 5,000 feet. The nests are the usual pads of moss inside a broken piece of bark but in the few I saw all had fairly thick linings of fur either of the Bamboo-rat or of a shrew. They were placed between 12 and 30 feet from the ground and they contained from 3 to 5 eggs. These are typical Tree-Creepers' eggs and some are not separable from brightly coloured pink eggs of *himalayana* and *familiaris* but as a whole they are much redder eggs, the spots being almost a pure red or pinky-red. Twenty-four eggs average 16·3 × 12·5 mm., and the extremes are **17·5** × 12·9 and 17·4 × **13·0** mm. and **15·2** × 12·3 and 15·4 × **11·0** mm. The birds are early breeders, commencing in early April and continuing until the second week in May.

Habits. The Sikkim Tree-Creeper is found north of the Brahmaputra between 6,000 and 10,000 feet but on the south of that river between 5,000 and 8,000 feet or a little higher than this in the Naga Hills. In its habits generally it is like all other Tree-Creepers but it seems to keep much to the interior of forests whether of pine or other trees and it is a very shy, quiet little bird, resenting observation more than most of the other members of the genus.

(452) Certhia discolor manipurensis.

HUME'S TREE-CREEPER.

Certhia manipurensis Hume, S. F., x, p. 151 (1881) (Manipur); Blanf. & Oates, i, p. 331.

Vernacular names. *Voh-ti-ti-ling* (Manipuri).

Description. Differs from the preceding bird in having the upper parts darker and the throat more fulvous.

Colours of soft parts as in *C. d. discolor*.

Measurements. Wing 66 to 71 mm.; tail 65 to 68 mm.; tarsus 17 to 18 mm.; culmen 15 to 16·5 mm.

Distribution. Manipur and the Chin Hills South and East of that State. The bird to the East of the Irrawaddy is not known and may be either the Manipur bird or some other form.

Nidification. Nests and eggs taken by Mackenzie in the Chin Hills, not far from the Manipur border, are just like those of the Sikkim Tree-Creeper but the former were placed in small holes in trees. Mackenzie describes them as little pads of moss lined with a few feathers and a little "fluff." An egg sent me, one of a clutch of four, measures 16·5 × 12·9 mm. but others in Mr. Mackenzie's own collection are longer, measuring 17·2 to 17·5 mm. This clutch was taken, hard set, on the 7th of May, but young birds were seen on the wing and shot on this date. Two other eggs taken by Mr. F. Grant measure 16·5 × 12·4 and 15·9 × 13 mm.

Habits. Quite similar to that of the Sikkim Tree-Creeper.

(453) Certhia discolor victoriæ.

THE CHIN HILLS TREE-CREEPER.

Certhia victoriæ Rippon, Bull. B. O. C., xvi, p. 87 (1906) (Mt. Victoria).

Vernacular names. None recorded.

Description. Similar to the Sikkim Tree-Creeper but much darker above, a blackish brown, with less fulvous; the throat, chin and breast are a dark reddish-fulvous and the abdomen and flanks are also darker and more tinged with fulvous.

Colours of soft parts as in the last bird.

Measurements. Wing 63 to 72 mm.; tail 65 to 70 mm.; tarsus 17 to 18 mm.; culmen 15 to 17·5 mm.

Distribution. So far obtained only in the high peaks round about Mt. Victoria in the South Chin Hills.

Nidification and Habits. Nothing recorded.

(454) Certhia discolor fuliginosa, subsp. nov.

THE KARENNI TREE-CREEPER.

Description. This little Creeper has hitherto been accepted as the same as the Sikkim Tree-Creeper, from which, however, it is very different. It is both darker and duller on the upper plumage, the brown blacker and the fulvous duller and less in extent; below, the whole plumage is a smoky brown with no tint of fulvous anywhere.

Colours of soft parts and Measurements as in *C. d. discolor*.

Type. No. 1903.12.24.363, not sexed. Loi-pang Nau, Mekong, 7,000 feet. April 1902. H. M. Thompson & Craddock Coll. British Museum.

Distribution. Shan States to Karenni.

Nidification and Habits. Nothing recorded.

(455) Certhia stoliczkæ.

STOLICZKA'S TREE-CREEPER.

Certhia stoliczskæ Brooks, J. A. S. B., xlii, 2, p. 256 (Sikkim); Blanf. & Oates, i, p. 332.

Vernacular names. *Dao-mojo-gajao* (Cachari).

Description. Upper plumage black streaked with fulvous; the wing-coverts black with fulvous tips; rump and upper tail-coverts ferruginous; tail brown, the shafts reddish and the outer webs tinged with reddish; quills dark brown, all but the first four with the usual oblique fulvous and black band; the quills tipped with buff and with a subterminal band of buff on the outer webs; chin and throat whitish; feathers round the eye, supercilium and cheeks buff; centre of breast and abdomen pale fulvous; sides of these parts, vent and under tail-coverts deep ferruginous; under wing-coverts and axillaries pale fulvous.

Colours of soft parts. Iris red-brown; upper mandible dark horny-brown; base of upper and whole lower mandible pale horny; legs and feet pale fleshy horny.

Measurements. Wing 67 to 74 mm.; tail 64 to 71 mm.; tarsus about 18 mm.; culmen 13 to 18 mm., generally about 16 mm.

Distribution. Sikkim and Bhutan to E. Assam. I found it in the North Cachar Hills at 5,000 feet in winter and it possibly extends to the Naga Hills and Manipur.

Nidification unknown.

Habits. Those of the genus. In N. Cachar it haunted the stunted oak forests between 5,000 and 6,000 feet, scrambling in and out of the long moss which covered every tree and hunting for insects in the masses of orchids and long streamers of moss as well as in the crevices in the bark. I never heard it utter anything but a very low squeak and it seemed a very silent bird.

Genus SALPORNIS Gray, 1847.

The genus *Salpornis* contains two species, one Indian and the other African. It differs from *Certhia* in many remarkable respects, although bearing a great general resemblance to it. It has an extremely long, pointed wing, with a minute first primary, whilst the second primary reaches to the end of the wing. The foot, also, is differently shaped.

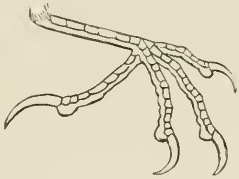


Fig. 85.—Foot of *Salpornis.*

Salpornis has a typical Certhia's bill, though it is longer than it is in most birds of that genus; the tarsus is short and the hind claw is much shorter than the hind toe. The tail is composed of 12 soft, rounded feathers and is nearly square.

The sexes are alike and the young are similar to the adult. There is apparently no spring moult.

(456) Salpornis spilonotus.

THE SPOTTED-GREY CREEPER.

Certhia spilonota Frankl., P. Z. S., 1831, p. 121 (Ganges between Calcutta and Benares).
Salpornis spilonota. Blanf. & Oates, i, p. 333.

Vernacular names. None recorded.

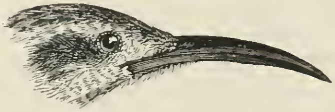


Fig. 86.—Head of *S. spilonotus.*

Description. Whole upper plumage, wings and tail black, spotted and barred with white; forehead and crown brownish; a broad white supercilium; lores and a line through the eye unspotted black; chin and throat white, the sides of the latter sometimes speckled with black; lower plumage pale cinnamon-fulvous barred with black and with white tips to some of the feathers.

Colours of soft parts. Iris dark brown; bill above dark blackish horny, below pale horny; legs and feet dark plumbeous.

Measurements. Length about 150 mm.; wing 84 to 91 mm.; tail 45 to 52 mm.; tarsus about 17 mm.; culmen 21 to 24 mm.

Distribution. Nothing has been added to our knowledge of this bird's distribution since 1889. Throughout a considerable portion of the plains of India, from the foot of the Himalayas South to the Kistna River. On the West the limits of this species appear to be Gurgaon, Sambhar, Ajmer and Abu. Further South it has been met with at Dhulia in Khandesh and Blanford records it from Chanda, Sirancha and the Godavari Valley. Ball obtained it at Sambulpar and at various localities in Chutia Nagpore and I have seen a specimen collected somewhere in Behar.

Nidification. The nest of this bird was first taken by Cleveland at Gurgaon on the 16th of April and subsequently Mr. T. R. Bell took a good many nests during March and April at Khandesh. The nests are extraordinary and bear no resemblance to those of Tree-Creepers of the genus *Certhia*. They are shallow cup-shaped affairs made of a matted mass of scraps of leaf-stalks and leaves, bits of bark and lichen bound together with spiders' webs and decorated externally with lichen, spiders' egg-bags, and caterpillar excreta. The position selected is the horizontal branch of a tree, generally at some point where a vertical twig or shoot can be used as a support to one of the sides. The nests are always placed in leafless trees on the bare branches and are practically invisible from below, so that the birds must be watched on to the nests before they can be found. Sometimes, however, the sitting hen gives away her position by answering her mate as he sits singing in the vicinity of the nest. The number of eggs seem to be nearly always two and very rarely three and these, too, are quite unlike what we should have expected. The ground-colour is a grey, or greenish-white according to Cleveland, and the markings consist of very dark brown tiny spots and specks sparsely scattered over the greater part of the egg but sometimes more numerous in an ill-defined cap or ring at the larger end. Cleveland's egg measured 17·3 × 13·4 mm. and those given me by Mr. Bell average about 16·9 × 13·0 mm. The surface is smooth and fine but dull and not very hard.

Habits. This Creeper is a bird of the plains, being found in small flocks in winter and in pairs as soon as the breeding season commences. Davidson found it not uncommon in Khandesh, common in the northern end of the Western Ghats along the Tapti River. The country here is hot and low-lying, mostly flat but containing small wooded hills. They haunt the larger trees for preference, but are also sometimes found on smaller ones and they frequent both forest and more open well-wooded country. Their actions on a tree are much the same as those of birds of the genus *Certhia* and they are equally active and quick in their movements. Blanford records their flight as rather swift and their call as a whistling note.

Genus **TICHODROMA** Illiger, 1811.

The genus *Tichodroma* contains the one species, the well-known Wall-Creeper, which breeds throughout the higher Himalayas, descending lower in the winter.

The Wall-Creeper, in addition to a complete autumn moult, has a partial one in the spring by which the colour of the chin and throat is changed. The sexes differ slightly from one another in summer. The young birds resemble the adults in winter plumage very closely, but they have more spots on the wings and these rufous instead of white. They also have less crimson on the wing.

Tichodroma has a very long, slender and almost straight bill, longer than the head, with long, narrow slits for nostrils. The wing is extremely large, but rounded, not pointed, the first primary being about half the length of the second and the second and third also shorter than the tip of the wing. The tail is composed of twelve soft feathers, about half as long as the wing and very slightly rounded. The tarsus is smooth and the hind claw longer than its toe.

Fig. 87.—Head of *T. muraria*.

(457) Tichodroma muraria.

THE WALL-CREEPER.

Certhia muraria Linn., S. N., i, p. 184 (1766) (S. Europe).
Tichodroma muraria. Blanf. & Oates, i, p. 334.

Vernacular names. *Dewal Gaiyuk* (Pushtu); *Sag-gorsa-lamdong-pho* (Lepcha); *Suppurotsu* (Chamba).

Description. In winter plumage the forehead, crown, nape and ear-coverts are brown; a ring round the eye and a short supercilium white; lores mixed ashy and brown; hind neck, back and scapulars ashy grey; rump and upper tail-coverts iron-grey; lesser wing-coverts bright crimson; the outer greater coverts and primary-coverts brown on the inner and dull crimson on the outer webs; the inner greater coverts and inner secondaries brown tinged with ashy; winglet brown; quills black tipped with whitish; the outer webs of the primaries and outer secondaries, except the first three, with the basal halves crimson; the first four primaries each with two large white spots on the inner webs; tail

black tipped with ashy, which gradually changes to white and increases in extent towards the outer tail-feathers; chin and throat pure white; remainder of lower plumage ashy slate, the under tail-coverts fringed with white; axillaries crimson.

Colours of soft parts. Iris dark brown; bill, legs and feet black.

Measurements. Total length about 170 to 180 mm.; wing 94 to 102 mm.; tail about 50 to 54 mm.; tarsus 25 to 27 mm.; culmen 27 to 32 mm.

In summer the crown of the head becomes grey and the chin and throat black. The female has generally rather less black on the throat than the male.

The young resemble the adult in winter plumage but there is less crimson on the wing and all the quills have each two rufous spots on the inner web. These spots gradually disappear, except on the first four large primaries, where they eventually turn white.

Distribution. The mountains of Europe and Asia, breeding throughout the Himalayas at suitable elevations and descending lower in winter, occasionally venturing actually into the plains in exceptionally cold weather.

Nidification. The Wall-Creeper breeds throughout the Himalayas between 14,000 and 16,000 feet, in some cases as low as 12,000 feet. Whitehead found it breeding in Chitral and the Kurram Valley and Whymper actually found its nest with young in June in the Lidar Valley in Garhwal. The young were old enough to leave the nest on the 27th of that month. In Tibet it breeds in some numbers just above the Gyantse Plains at little over 12,000 feet, laying in the early part of May onwards. Owing to the inaccessible places in which it builds and to its habit of placing its nest deep down in crevices of unbreakable rock, few nests have been taken in India, though the Tibetans know well many places in which it breeds. The nest is just a pad of moss and grass, more or less mixed and lined with wool, fur or hair, wedged into the bottom of some deep but narrow crevice of the rock-face of a precipitous cliff. The eggs number four to six and are pure, but rather dull, white with a few specks and spots of black or deep red-brown at the larger end. In shape they are broad ovals, decidedly compressed and pointed at the smaller end. The measurements of 26 eggs, including 15 mentioned by Hartert, are:—average 21·3 × 14·9 mm.; maxima 22·7 × 15·7 and 20·8 × 16·0 mm., minima 20·0 × 14·0 mm.

Habits. This beautiful little bird haunts the face of precipitous cliffs and great rocks, scuttling about over their surface just as the Tree-Creepers do over the trunks of great trees. Unlike the Tree-Creepers, however, they have a habit of constantly fluttering about the holes and crevices as they search for their insect food and, when so employed, they are singularly like large and beautiful butterflies. This curious habit has earned them the name of

Butterfly-birds in many languages and in countries as far apart as Switzerland and Eastern Tibet. Their trivial name of Wall-Creeper is given them on account of their resorting to the walls of buildings and retaining walls of roads etc, when they leave their wilder, uninhabited summer forests and visit the lower hills and plains of Europe. It is a not uncommon cage-bird in Switzerland and will lay freely in captivity, though no instances are recorded of their rearing any young under these conditions.

Family TROGLODYTIDÆ.

The birds of this family are very close to those of the last but seem to be sufficiently divided by the short, rounded wings of the Wrens as compared with the longer, pointed wings of the Tree-Creepers; the tarsi also are longer and the bill, though varying in shape from the curious wedge-shaped bill of *Sphenocichla* to the thin, narrow bill of *Troglodytes*, is never like the long, slight bill of *Certhia* with the culmen curved downwards practically from its base.

In the *Troglodytidæ* the tail is composed of soft feathers numbering from 6 in *Pnoepyga* and 10 in *Spelæornis* to 12 in others; the tarsi and feet are very strong; there are no rictal bristles except in the rather aberrant genus *Tesia*. The young of the spotted forms are much less barred or spotted than the adults, whilst the young of *Tesia* have quite a different coloration to that of either parent. In some of the genera the sexes are alike, whilst in others they differ greatly.

Key to Genera.

- A. Without any rictal bristles.
  - *a*. Tail much shorter than wing.
    - *a*′. Tail of twelve feathers.
      - *a*″. Tail not greatly graduated, the outermost feathers about three-quarters length of central .... TROGLODYTES, p. 444.
      - *b*″. Tail much graduated, outermost feathers only half length of central. ELACHURA, p. 448.
    - *b*′. Tail of ten feathers .... SPELÆORNIS, p. 451.
    - *c*′. Tail of six feathers .... PNOEPYGA, p. 457.
  - *b*. Tail and wing about the same in length . SPHENOCICHLA, p. 460.
- B. With well-developed rictal bristles ...... TESIA, p. 462.

Genus **TROGLODYTES** Vieill., 1807.

The name *Troglodytes* has been rejected as it was first applied to an American Wren; as this species, however, is quite congeneric with the English Wren, of which the Indian forms are but local races, it should be retained.

In *Troglodytes* the sexes are alike and the young bird is similar to the adult. The bill is very slender and feeble and about half the length of the head; the wing is extremely short and rounded, the first primary being about two-thirds the length of the second; the tail, of 12 feathers, is shorter than the wing and not very much graduated, the outer feathers being about three-quarters the length of the central ones; the tarsi and claws are long and slender.

Troglodytes troglodytes.

Key to Subspecies.

A. Upper plumage very dark rufous-brown ..	*T. t. nipalensis*, p. 445.
B. Upper plumage rufous-brown, not very dark.	*T. t. talifuensis*, p.446.
C. Upper plumage a much paler rufous-brown.	
a. Wing 47 to 51 mm.; culmen 11 to 11·5 mm.	*T. t. neglectus*, p. 446.
b. Wing 53 to 56 mm.; culmen about 13 mm.	*T. t. tibetanus*, p. 448.

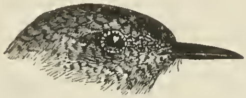


Fig. 88.—Head of *T. t. nipalensis.*

(458) Trogolodytes troglodytes nipalensis.

THE NEPAL WREN.

Troglodytes nipalensis Hodgs., Blyth, J. A. S. B., xiv, p. 589 (1845) (Nepal).
Anorthura nipalensis. Blanf. & Oates, i, p. 337.

Vernacular names. *Marchek-pho* (Lepcha).

Description. Upper plumage dark rufous-brown, the lower back, wings and tail closely barred with black; sides of the head, lores and an indistinct supercilium brown with tiny rufous-ashy spots; lower plumage rufous-brown, almost immaculate on the chin, throat and upper breast in old birds, elsewhere closely barred with black, often with some albescent on the belly and with some white spots on the under tail-coverts.

Some birds have a few small white spots on the lesser and median wing-coverts, a feature found occasionally in all the races of this species. In the same way the barring on the sides of the throat and neck varies very much in extent.

Colours of soft parts. Iris hazel; bill dark brown, fleshy at the base; legs fleshy-brown to horny-brown.

Measurements. Total length about 95 mm.; wing 48 to 53 mm.; tail 27 to 30 mm.; tarsus 19 to 20 mm.; culmen 11 to 12 mm.

Distribution. Sikkim and Nepal to Bhutan. Specimens from Garhwal appear to be of this race, whilst those from Simla are nearer to *neglectus*. Specimens collected by Whymper are undoubtedly *nipalensis* but Osmaston records two specimens of *neglectus* taken by him in the Northern parts of Garhwal. Very possibly Garhwal forms the connecting area between the two subspecies.

Nidification. The only collector who has seen the nest and eggs of this Wren is Mr. S. L. Whymper, who describes them as follows:—"Two nests were found with eggs and three with young birds, all in crevices in birch-trees, from 20 to 30 feet up, a decidedly different situation to all the nests of the Kashmir Wren I have seen or heard of. The nests were large and domed, made of moss, grass and leaves and very thickly lined with feathers. The eggs were white with a few red specks." An egg subsequently sent me by Mr. Whymper measures 16·6 × 12·6 mm. and is not distinguishable from those of *T. t. neglectus.* It was taken on the 29th of June.

Habits. There is not much on record about this Wren but the habits are not likely to differ from those of *neglectus.* Whymper found it in Tehri-Garhwal between 11,000 and 13,000 feet. In Sikkim, Blanford found it hunting over loose, moss-covered stones, constantly entering the crevices between the blocks and emerging again at a considerable distance. He usually saw the birds in small families, three or four together, hunting on the ground and low bushes and with the same predilection for exploring hollows under stones.

(459) Troglodytes troglodytes talifuensis.

THE YUNNAN WREN.

Troglodytes talifuensis Sharpe, Bull. B. O. C., xiii, p. 77 (1902) (Talifu, Yunnan).

Vernacular names. None recorded.

Description. Similar to the preceding race but not so dark either above or below.

Colours of soft parts as in *T. t. nipalensis.*

Measurements. Wing 47 to 52 mm.; tail 29 mm.; tarsus about 17 to 18 mm.; culmen 11 to 11·5 mm.

The spotting on the wing-coverts is very conspicuous on the type-specimen but in others is no more developed than in many specimens of the other subspecies, and this appears to be purely an individual characteristic.

Distribution. Yunnan, Shan States and Northern Siam.

Nidification unknown.

Habits. Nothing recorded.

(460) Troglodytes troglodytes neglectus.

THE KASHMIR WREN.

Troglodytes neglectus Brooks, J. A. S. B., xli, p. 328 (1872) (Kashmir).
Anorthura neglecta. Blanf. & Oates, i, p. 338.

Vernacular names. None recorded.

Description. Like *T. t. nipalensis* but very much paler all over. The brown is not nearly so deep, less rufous and in some cases with almost a grey tint.

Colours of soft parts. Iris brown or hazel-brown; bill horny-brown or fleshy-brown.

Measurements. I cannot make out this bird to be smaller than *T. t. nipalensis* or to have visibly smaller or weaker feet and legs than that bird. Wing 47 to 51 mm.; tail 26 to 30 mm.; tarsus 19 to 20 mm.; culmen 11 to 11·5 mm.

Troglodytes magrathi (Whitehead, Bull. B. O. C., xxi, p. 19, 1907: Safed Koh) cannot be separated from *neglectus*.

Distribution. From the border hills of Afghanistan and Baluchistan throughout the whole of Kashmir to the Simla Hills.

Nidification. Whitehead found the Kashmir Wren breeding on the Safed Koh between 8,500 and 12,000 feet and it breeds freely throughout Kashmir between 6,000 and 10,000 feet. The most usual form of nest is a large domed affair, constructed principally of moss and densely lined with feathers, which is placed on the ground on a bank between the roots of a pine or under a boulder; more rarely they may be placed among creepers on a tree or in a specially dense bunch of foliage. Davidson, however, also took eggs from holes both in banks and trees in which the nests consisted merely of a few feathers and a few odd scraps of other materials. The eggs number four or five and are a pure white in ground-colour with a few specks and spots of pale red, never numerous and sometimes altogether wanting. The shell is frail and the texture fine but glossless. In shape they are ovals, often inclined lo be pointed at the smaller end. Fifty eggs average 16·8 × 12·3 mm. and the extremes are: maxima 18·1 × 12·1 and 17·6 × 13·2 mm.; minima 14·6 × 10·3 mm.

The breeding season is from the end of May to the end of June or early July.

Habits. The habits of the Kashmir Wren differ but little from those of its European relation but it is more of a forest bird than a haunter of the immediate neigbourhood of man. It is the same restless but secretive little bird, hopping about the undergrowth or hunting rocks and boulders for spiders and other insects. Sometimes it may be seen scrambling among the creepers, moss and orchids on some fallen tree or mass of boulders, sometimes it flits in little jerky flights from one tangle of bushes to another, whilst yet again it may be noticed making occasional visits to the lower branches of trees with ample foliage cover. Its note and song are said to very closely resemble those of the English Wren and, like that bird, it subsists almost entirely on an insect diet.

(461) Troglodytes troglodytes tibetanus.

THE TIBETAN WREN.

Anorthura tibetana Walton, Bull. B. O. C., xv, p. 93 (1905) (Khamba Jong, Tibet).

Vernacular names. None recorded.

Description. Exactly like *T. t. neglectus* except that it is decidedly bigger.

Colours of soft parts. None noted.

Measurements. Wing 53 and 56 mm.; tail 33 mm.; tarsus 17 and 18 mm.; culmen 13 mm.

Distribution. Khamba Jong, Tibet.

Nidification unknown.

Habits. Walton records (Ibis, 1906, p. 74) that he shot several of these Wrens at Khamba Jong in the autumn: "They occurred there during very cold weather, when all the streams were frozen hard, except one that was supplied by a clear warm spring."

Genus ELACHURA Oates, 1889.

This genus was created by Oates for the little Wren *Troglodytes formosus* (*punctatus*), which differs from the typical birds of the genus *Troglodytes* in having a much stouter bill and a more graduated tail. The plumage in *Elachura* is spotted and not barred.

In *Elachura* the sexes are alike and the young are probably similar to the adult. The bill is stout and almost half the length of the head. The wing is very short and rounded and the first primary is about two-thirds the length of the second. The tail is well graduated, the outer feathers reaching to about the middle of the central ones. The tarsi, toes and claws are long and strong. There are only two species known and one of these, *Elachura haplonota*, is represented by a single specimen.

Key to Species.

A. Upper plumage spotted .... *Elachura formosa*,* p. 449.
B. Upper plumage unspotted .... *Elachura haplonota*, p. 450.

* The name *punctata* cannot be used for this little Wren as *Troglodytes punctatus* is already preoccupied by Brehm. *Troglodytes formosus* of Walden is therefore the next available.

(462) Elachura formosa.

The Spotted Wren.

Troglodytes formosus Walden, Ibis, 1874, p. 91 (Darjeeling).
Elachura punctata. Blanf. & Oates, i, p. 339.

Vernacular names. *Marchek-pho* (Lepcha).

Description. The upper plumage and wing-coverts dark brown, tinged with rufous on the lower rump and upper tail-coverts, each feather with a small, subterminal white spot bordered above and below with black; inner webs of quills brown, the outer barred with chestnut and black; tail reddish-brown, cross-barred with black; lower plumage pale fulvous, inclining to rufous on the abdomen and flanks, each feather with a triangular white spot, above which is a smaller black one; all the feathers delicately vermiculated with white.

Fig. 89.—Head of *E. formosa.*

Colours of soft parts. Iris brown; legs horny-brown; bill horny-brown.

Measurements. Total length about 110 to 115 mm.; wing 49 to 60 mm.; tail 30 mm.; tarsus 18 to 19 mm.; culmen 11 to 12 mm.

Distribution. Sikkim to Eastern Assam. Stevens records obtaining his specimens at Panchnoi, Dafla Hills, at quite low elevations.

Nidification. Several clutches of this Wren's eggs were obtained by Mr. W. P. Masson and Mr. K. Macdonald in Sikkim round about Darjeeling and in Native Sikkim. The former reported them as very common on the Singa-lila Ridge above 9,000 feet. The nest was described as a deep, semi-domed cup made of dead leaves, grass, roots, etc., densely lined with feathers and placed on the ground on a bank, half hidden in fallen rubbish or well concealed by the undergrowth. The eggs seem to number 3 or 4 only and are rather glossy, with a fine hard surface. In colour they are pure white with a few specks of reddish-brown. The few eggs I have seen measured about $16{\cdot}5 \times 12{\cdot}5$ mm.

Habits. Mr. Masson informed me that these birds were typical little Wrens in their behaviour, keeping much to their legs and apparently loth to take wing unless very hard pressed. As they live principally in deep forest with plentiful undergrowth and much broken with moss-covered boulders and rocks, it is not often one can force them to flight.

(463) Elachura haplonota.

THE PLAIN BROWN WREN.

Elachura haplonota Stuart Baker, Ibis, 1892, p. 62 (Hungrum, N. Cachar).

Vernacular names. *Tinglin-rui-gajeba* (Kacha Naga).

Description. Whole upper plumage and wing-coverts dark umber-brown, rather lighter on the rump and upper tail-coverts, the feathers obsoletely edged with rather pale sienna-brown; wings dark cinnamon-brown on the exposed parts and dark brown where unexposed in the closed wing; tail brown, tinged with cinnamon-red but not so strongly as are the wing-quills; lores fulvous-brown, dusky next the eyes; chin and throat white tinged with fulvous and the feathers, except in the centre, tipped with dusky; breast and sides of the neck fulvous-brown, the feathers tipped brown and subtipped white, the white being most prominent in the centre of the breast; centre of abdomen white; flanks and under tail-coverts fulvous-brown, some of the feathers of the former tipped white; thighs greyish-brown, the shafts of the feathers paler; under wing-coverts grey; axillaries dark fulvous-brown.

Colours of soft parts. Iris light red; bill dark horny, slightly paler on commissure and tip; gape black, mouth bluish-fleshy; legs sanguineous-fleshy, the claws still paler.

Measurements. Length in the flesh 104 mm.; wing 50 mm.; tail 40 mm.; tarsus 15 mm.; culmen 10 mm.

Distribution. The only specimen known was obtained on the Hungrum Peak, N. Cachar Hills, at 6,400 feet.

Nidification. The nest, upon which the above bird was trapped, was made of skeleton leaves, dead leaves, roots, tiny twigs and grass bents fairly well bound together, covered outside with loose dead leaves and compactly lined with skeleton leaves. In shape it was a very deep cup about 81 mm. across its broadest part by about 135 mm. deep and it was placed under a fallen tree, supported by fallen branches and rubbish, the fallen tree itself forming the top of the nest.

The eggs, three in number, were pure glossy white, one faintly speckled and the others more strongly marked with pale reddish-brown. They measure about 17·2 × 13·1 mm.

The nest was taken on the 11th May in very dense secondary growth in which many dead trees were left lying.

Habits. The two birds seen when watching the above nest were just like birds of the genus *Pnoepyga* in habits, very active and restless, quick on their legs but slow and feeble in their flight. Other birds seen but not procured, with a nest similar to that above described, were just as shy and restless. The call-note is a loud, clear whistle and there is also a constantly-uttered soft "chir." The bird, trapped on its nest, had fed on ants and a species of tiny bright blue beetle.

Genus SPELÆORNIS Sharpe, 1881.

The name *Urocichla* is pre-occupied but the birds placed by Sharpe in that genus are congeneric with those which he placed in his following new genus *Spelæornis* in the Catalogue of Birds. This name is therefore applicable.

The birds of this genus have short, rounded tails of 10 feathers only; the plumage is soft and full and the feathers squamated; the bill is like that of *Elachura* and *Troglodytes* but stouter than either; the tarsi are long and strong and the feet the same. The sexes are alike but the young differ from the adults in being unmarked above and, generally, in having redder wing-quills.

Key to Species.

A. Lower plumage without any black and white bars .... *S. longicaudatus*, [p. 451.

B. Lower plumage barred with black and white .... *S. caudatus*, p. 456.

Spelæornis longicaudatus.

Key to Subspecies.

A. Under parts fulvous-rufous, neither barred nor spotted .... *S. l. longicaudatus*, [p. 452.

B. Under parts rufous with black terminal spots .... *S. l. chocolatinus*, p. 453.

C. Under parts principally grey, more or less tinged with rufous on flanks.

 a. No distinct spots on lower plumage .... *S. l. reptatus*, p. 455.

 b. Lower plumage conspicuously marked with dark brown terminal and dull white subterminal spots.............. *S. l. sinlumensis*, p. 453.

 c. Sides of breast more strongly tinged with rufous and spotting on lower plumage less conspicuous .... *S. l. kauriensis*, p. 454.

D. Whole lower plumage practically white with triangular black tips .... *S. l. oatesi*, p. 455.

At present there is so little material available for examination that it is difficult to say whether or not some of the hitherto so-called species are even good subspecies and with better series some may have to be done away with. *Spelæornis l. kauriensis*, for instance, is very probably nothing more than feebly marked specimens of *S. l. sinlumensis*, both occurring in the Bhamo Hills at about the same elevation. On the other hand, more material might possibly show that in *Spelæornis longicaudatus*, *Spelæornis sinlumensis* and *Spelæornis oatesi* we have three quite good species. For the present it seems safer to retain them all as geographical races of *longicaudatus*, dealing with them more definitely when we have more specimens for examination.

(464) Spelæornis longicaudatus longicaudatus.

THE ASSAM LONG-TAILED WREN.

Pnoepyga longicaudata, Moore, P. Z. S., 1854, p. 7 (N. India, Khasia Hills).
Urocichla longicaudata. Blanf. & Oates, i, p. 340.

Vernacular names. *Tin-lin-rui* (Kacha Naga).

Description. Forehead to hind neck olive-brown, each feather with a narrow dark brown or blackish margin; rump, upper tail-coverts and tail olive-brown with a rufous tinge; coverts and wing brown, with the greater part of the outer webs of the feathers chestnut-brown; lores, cheeks and ear-coverts deep ashy; the whole lower plumage ferruginous, the feathers of the throat and breast with numerous small brown specks, most conspicuous in newly moulted birds; middle of the abdomen white.

Fig. 90.—Head of *S. l. longicaudatus*.

Colours of soft parts. Iris red in adults, brown in the young; bill dark horny-brown to blackish; legs and feet light brown.

Measurements. Length about 115 mm.; wing 49 to 60 mm.; tail 45 to 48 mm.; tarsus about 19 to 20 mm.; culmen about 12 mm.

Distribution. Hills South of the Brahmaputra, apparently *not* Manipur and not the extreme Eastern Naga Hills.

Nidification. This curious little Wren breeds in considerable numbers in the Khasia Hills but is much more rare in the adjoining Cachar and Naga Hills. It commences breeding in early April and eggs may be found to the end of June. The nests of this Wren and all others of the genus are *sui generis* and cannot be confounded with those of any other bird. The outer part consists of dead leaves, withered grass, a few roots and sometimes a few bamboo spathes, but all the materials are of a very damp and rotten description, falling to pieces directly the nest is moved from its original position. The lining, however, is quite water-proof and consists of a material exactly resembling *papier mâché*, apparently made of skeleton leaves and some soft fibrous stuff worked into a pulp and then spread over the whole interior of the nest in a very neat cup. The nest itself is a long oval, generally completely domed, sometimes only partially so, and is placed on the ground on some sloping bank among weeds or scrub in damp, evergreen forest. The eggs number two to four and are pure, but dull white, sparsely speckled, chiefly at the larger end, with reddish-brown. The texture is fine and close and the shell fairly stout. In shape they are broad, obtuse ovals.

Fifty eggs average 18·4 × 14·9 mm. and the extremes of length and breadth are **19·9** × 15·0 ; 18·6 × **15·9** ; **18·0** × 15·0 and 18·4 × **19·5** mm.

Habits. The Long-tailed Wren is found between about 3,500 and 6,500 feet, resident and breeding wherever found. It haunts principally dense, evergreen forest with lots of weed and fern undergrowth and especially those places where the ground is rough and broken with big boulders. Among these it creeps and climbs just as the Common Wren does, but it is even less inclined to fly than that bird and seeks safety by dodging into crevices and holes between the boulders. Even when disturbed from the nest, which it will not leave until the hand almost touches it, it merely flies a foot or two and then drops into the undergrowth and scurries away on foot. It is a very silent bird but I have heard it give a loud, clear whistle much like the call of *Pnoepyga* and after being disturbed it will continue to utter its soft chirring note for some minutes. It is entirely insectivorous.

(465) Spelæornis longicaudatus chocolatinus.

GODWIN-AUSTEN'S WREN.

Pnoepyga chocolatina Godw.-Aust., Ibis, 1875, p. 252 (Kedimai, Manipur).

Vernacular names. None recorded.

Description. Upper plumage and wings fulvous-brown, more rufous on lower back, rump and tail; feathers of head and back obsoletely fringed with darker brown; lores and line through eye grey; chin albescent; centre of belly and breast white, splashed with rufous; throat, upper breast, sides of lower breast and flanks rufous, the feathers with black terminal edges and subtipped with white; under tail-coverts darker rufous.

Colours of soft parts. "Bill dark brown. Legs pale flesh-colour" (*G.-A.*).

Measurements. Wing 47 and 50 mm.; tail 36 and 40 mm.; tarsus 20 mm.; culmen 10 and 11 mm.

Distribution. The only two specimens known were obtained by Godwin-Austen at Kedimai, Manipur, about 4,000 feet altitude.

Nidification and Habits. Nothing recorded.

(466) Spelæornis longicaudatus sinlumensis.

THE SINLUM WREN.

Urocichla sinlumensis Harington, A. M. N. H., ser. 8, ii, p. 246 (1908) (Sinlum, Bhamo Hills).

Vernacular names. None recorded.

Description. Above like *S. l. longicaudatus* but more fulvous, less orange and with the dark bars better defined, below ashy-

grey, the feathers with black terminal bars and conspicuous subterminal white spots; centre of throat and upper breast whitish; under tail-coverts rufous-brown.

Colours of soft parts. "Iris reddish-brown; bill black; legs brownish" (*Harington*).

Measurements. Wing 48 and 51 mm.; tail 36 to 37 mm.; tarsus 21 mm.; culmen 12 mm. "Total length about 4·1" (=104 mm.) (*Harington*).

Distribution. Sinlum, Bhamo Hills.

Nidification. Nests of this Wren taken by Col. Harington and Mr. F. Grant were just like those of *S. l. longicaudatus*, that is to say oval-shaped, domed nests made principally with dead leaves and lined with the same *papier mâché* substance which appears to be used by all the birds of this genus. They were placed on the ground in forest, on banks in dense undergrowth. The five eggs sent to me are all quite like those of *S. l. longicaudatus*, white eggs well speckled with dark red, but of three eggs in one clutch taken by Col. Harington two were pure white and the third very faintly freckled. Eight eggs average 19·0 × 14·6 mm. and the extremes are **20·7 × 15·6** and **18·1 × 14·1** mm.

May and June seem to be the breeding season and apparently the nests were all found at about 6,000 feet elevation.

Habits. Harington describes this Wren as an inveterate skulker and very hard to obtain though its loud, powerful song may often be heard. It keeps almost entirely to dense forest with thick undergrowth between 5,000 and 8,000 feet.

(467) Spelæornis longicaudatus kauriensis.

Harington's Long-tailed Wren.

Urocichla kauriensis Harington, A. M. N. H., ser. 8, ii, p 246 (1908) (Watan, Bhamo Hills).

Vernacular names. None recorded.

Description. Very close indeed to *S. l. sinlumensis* but the throat and breast a shade more fulvous-grey, a little redder perhaps on the flanks and with the markings on the under plumage less distinct.

Colours of soft parts. "Iris dark red; bill dark horn-colour; legs light brown" (*Harington*).

Measurements. Wing 47 to 48 mm.; tail about 30 mm. (damaged); tarsus about 20 mm.; culmen about 12·5 mm.

Distribution. The only two specimens known were both taken at Watan, Bhamo Hills, at about 7,000 feet.

I retain this race with very great doubt and am convinced that with a better series of this and the previous form the *S. l. sinlumensis* will have to be suppressed. *Kauriensis*, it should be

noted, will be retained because it appears earlier on the same page than that of *sinlumensis*.

Nidification. The two specimens sent by Col. Harington to the British Museum were shot when building their nest in low scrub-jungle at the edge of dense forest.

Habits. *In epistola* Col. Harington says that they are the same determined little skulkers as the Sinlum Wren, with similar haunts, habits and voice.

(468) Spelæornis longicaudatus reptatus.

Bingham's Long-tailed Wren.

Urocichla reptata Bingham, Bull. B. O. C., xiii, p. 54 (1903) (Loi-pang-Nau, Mekong Valley).

Vernacular names. None recorded.

Description. Similar to *sinlumensis* but with wings more cinnamon-chestnut, below all grey with no white on throat and breast and with the dark bars and paler spots obsolete; the sides of breast and flanks are more rufous.

Colours of soft parts. "Iris crimson; bill dark brown; legs and feet brown" (*Forrest*).

Measurements. Wing 47 mm.; tail damaged; tarsus 20 mm.; culmen 13 mm.

Distribution. East of Kengtung on the Mekong Valley at about 7,000 feet and on the Shweli–Salwin Divide in Yunnan.

Nidification and Habits. Nothing recorded and only one specimen obtained by Harington and a second by Forrest in Yunnan at about 8,000 feet in December 1919 in a thicket. Nests and eggs sent me by a collector from Thoungyi, Southern Shan States, are probably of this race but the birds' skins sent are too fragmentary to distinguish with any certainty. The nests are exactly like those of the Assam Long-tailed Wren, as are the eggs which measure 18·5 × 14·9 mm.

The two clutches, each of three slightly incubated eggs, were taken on the 16th and 28th April respectively.

(469) Spelæornis longicaudatus oatesi.

Rippon's Long-tailed Wren.

Urocichla oatesi Rippon, Bull. B. O. C., xiv, p. 83 (1904) (Mt. Victoria).

Vernacular names. None recorded.

Description. Upper plumage and wings fulvous-brown, with faint dark margins to the feathers and slightly more rufous on the rump and tail; lores, sides of forehead and cheeks grey; ear-coverts greyish-fulvous to golden-brown; below white with

triangular terminal spots of blackish brown; in some cases the lower plumage is faintly tinged with fulvous, especially on the sides; flanks brown obscurely barred with blackish; under tail-coverts rufous The white colour of the lower parts at once distinguishes this race from all the others.

Colours of soft parts. Iris red-brown; bill dark horny-brown; legs brownish-fleshy.

Measurements. Wing 47 to 49 mm.; tail 37 to 39 mm.; tarsus 21 mm.; culmen 12 to 13 mm.

Distribution. Chin Hills above 5,000 feet.

Nidification. Major Venning and Mr. F. Grant found this Wren breeding in the Chin Hills between 5,000 and 9,000 feet in March, April and May, eggs being found between the 12th March and the 24th May, two fresh eggs having been taken on the latter date. The nest is typical of that of the genus. Venning describes one taken by him as "a large, oval, domed-shaped structure, composed of an outer layer of dead leaves, canna leaves, coarse grass, etc., inside which was a layer of grass stems, fibres and a little moss, the cup being lined up to the level of the entrance with a plaster about $\frac{1}{16}$ inch thick, composed, as far as I could determine, of a substance which looked like chewed thistle stem or chewed grass. The dimensions were: exterior height 6 in., diameters 5 in. and 4 in." Other nests taken were exactly like the one described; they were all placed on damp ground in undergrowth or grass in forest.

The eggs, which number two to four in a full clutch, are not distinguishable from those of the Assam race. Fifteen eggs average about 18·2 × 14·6 mm.

Habits. There is practically nothing on record about this bird, but it is not likely that its habits differ in any way from those of the other races. It, however, seems occasionally to be found in rather more open country.

(470) Spelæornis caudatus.

The Tailed Wren.

Tesia caudata Blyth, J. A. S. B., xiv, p. 589 (1845) (Darjiling).
Urocichla caudata. Blanf. & Oates, i, p. 341.

Vernacular names. None recorded.

Description. Lores and sides of the head grey; the whole upper plumage olive-brown, the feathers with terminal black edges and faint shaft-streaks; wings and their coverts chestnut-brown; tail rufous-brown; chin and throat bright chestnut; breast paler chestnut, each feather with a black centre and tip; sides of the body the same; abdomen black, each feather with a white shaft-streak, in most cases hidden, and a large subterminal square white spot.

Colours of soft parts. Iris brown; bill blackish; legs brown.

Measurements. Total length about 100 mm.; wing 47 to 51 mm.; tail 31 to 35 mm.; tarsus about 20 mm.; culmen about 11 to 12 mm.

Distribution. Sikkim only as far as is known at present.

Nidification. Nothing recorded beyond Hume's note to the effect that it builds "a deep cup-shaped nest about the roots of trees or in a hole in fallen timber; the nest is a dense mass of moss and moss roots, lined with the latter. The eggs are spotless white." A nest and four clutches of eggs taken in Sikkim at about 8,000 feet and sent to me do not agree with this description. The nest sent has evidently been egg-shaped and is made of dead leaves, fine twigs, bracken and grass, all very decayed and well matted together. The lining is very much like that of the Long-tailed Wrens' but is brown in colour instead of whitish and not quite so firmly stuck together. The eggs, two clutches of four and two of three, are just like those of *Spelæornis l. longicaudatus*, i. e. pure but rather dull white, feebly speckled with reddish-brown and deep purple-brown. They measure on an average for twenty eggs 18·1 × 14·1 mm., and the extremes are 19·9 × 14·2 and 18·6 × 14·5 mm. maxima and 17·3 × 14·2 and 17·9 × 13·8 mm. minima.

These nests were all found in heavy, damp forest and were placed on the ground on banks amongst weeds, moss and caladiums. They were taken between the 17th May and the 28th June, at an elevation of 8,000 feet and over.

Habits. Nothing recorded. Mr. Masson, who sent me the nest and eggs, could only say that they belonged to a small Wren which he could never catch on the nest or see quickly enough to shoot as it left it. The birds apparently were not common, though they were in fair numbers along the ridges above Darjeeling between 8,000 and 10,000 feet. They were never seen outside the dense, damp, evergreen forest.

Genus **PNOEPYGA** Hodgson, 1845.

The genus *Pnoepyga* contains two species of Wren which are characterized by an extremely short tail of six soft feathers, completely concealed from view by long and ample rump feathers. The wing, bill and feet are very much the same as in *Spelæornis*.

The sexes differ in the female having the white on the under parts replaced by bright fulvous. The young are very dull coloured without any of the conspicuous barring and spotting of the adults.

Key to Species.

A. Wing well over 55 mm. . . . . *Pnoepyga squamata*, p. 458.
B. Wing well under 55 mm. . . . . *Pnoepyga pusilla*, p. 459.

(471) Pnoepyga squamata squamata.

THE SCALY-BREASTED WREN.

Microura squamata Gould, Icon. Aves, pl. v (1837) (Cachar).
Pnoepyga squamata. Blanf. & Oates, i, p. 342.

Vernacular names. *Marchok-bong* (Lepcha); *Inrui-ba gadiba* (Kacha Naga).

Description.—Adult male. Whole upper plumage and lesser wing-coverts rich golden-brown, the forehead, feathers above the eye and sides of neck with fulvous shaft-stripes, the remaining upper plumage with fulvous subterminal drops and with black edges, the latter becoming bolder on the rump where the drops often become bars; median and greater coverts brown, broadly edged with chestnut-brown and often with terminal fulvous spots; primaries and secondaries chestnut-brown on the visible portions and the innermost secondaries often tipped with fulvous; chin and throat white with brown edges to the feathers; breast and centre of the abdomen white, the feathers with broad black centres and edges; sides of the breast and flanks fulvous-brown with similar dark centres and margins; under tail-coverts and vent fulvous.

Colours of soft parts. Iris bright hazel to deep brown; bill horny-brown above, pale fleshy-horny on lower mandible, gape and commissure; legs fleshy-brown to light brown.

Measurements. Length about 100 mm.; wing 59 to 64 mm.; tail about 14 mm.; tarsus 21 to 23 mm.; culmen 11 to 12 mm.

Adult female. Similar to the male but with the whole lower plumage fulvous instead of white, every part marked as in the male, though in some specimens the chin and throat are almost immaculate.

Distribution. The Himalayas from the Sutlej Valley to Eastern Assam, both North and South of the Brahmaputra; Chin Hills and West and South-West Burma to Tenasserim.

Nidification. The Scaly-breasted Wren breeds from the end of April to the middle of June between 3,500 and 7,000 feet. It makes two very distinct types of nest, either of which is among the most beautiful specimens of birds' architecture. That most commonly made is built in and of the long strands of brilliant green moss which clothes the trunks and branches of so many trees in the more humid forests. The inner strands are compactly and firmly woven together to form a tiny cup, well lined with black moss roots, over all of which the outer green strands fall in natural profusion so that the tiny entrance, little more than an inch across, can never be found without most careful search. The second type of nest is a tiny ball of the same brilliant green moss, tightly wedged in amongst the masses of orchids, ferns and creepers growing over trees, dead and alive, or fallen logs. A third type of nest, a cup-shaped one of moss, was found by Mandelli in a bush,

but this sort of nest must be quite abnormal. The height selected may be anything between a foot and six feet from the ground.

The eggs vary from three to five, but four is the full number normally laid. They are pure white, glossless and very fragile, regular ovals, sometimes a little pointed at the smaller end. Eighty eggs average 18·6×13·7 mm. and the extremes are: maxima, **19·3**×14·4 and 19·0×**14.6** mm.; minima, **16·9**×13·9 and 17·1×**13·1** mm.

Habits. This quaint little tailless bird is a typical Wren in all its habits but is even more of a pedestrian and less of a flyer than the birds of the genus *Troglodytes*. It is an inhabitant of wet, evergreen forest, loving the vicinity of jungle-streams where it scrambles over the mossy boulders, the fallen trees and decaying vegetation. In and out of the hollows and crevices, under and through the luxuriant moss and climbing plants, ever on the move yet never on the wing, at the first hint of danger it dodges out of sight, only to reappear once again when qniet is restored. It is insectivorous in its diet and seems especially fond of the smaller spiders and ants, pursuing these with great activity and restless energy. Its ordinary note is a loud, rather shrill whistle but it attempts a little song in the breeding season which rather reminds one of the English Wren.

This Wren is found up to at least 9,000 feet and possibly a good deal higher in Sikkim. In winter it occasionally may be found as low as 3,000 feet but it does not descend much below its ordinary breeding range, even in the coldest weather.

Pnoepyga pusilla.

This species has been split up into numerous races on rather slender reasons, for the variations are, for the most part, individual rather than geographical. The two points most usually dwelt upon are the amount of spotting and barring, more especially on wing-coverts and innermost secondaries, and the rufous or brown colouring on the sides of the head. The extremes of both these features are to be found in birds obtained in Nepal and Sikkim, now in the British Museum Collection, and the greatest care should be exercised when naming subspecies that not only the series named is a full one but that ample material for comparison is available. With more material it is possible that some of the subspecies at present accepted will have to be suppressed.

(472) Pnoepyga pusilla pusilla.

The Brown Wren.

Pnoepyga pusilla Hodgs., P. Z. S., 1845, p. 25 (Nepal); Blanf. & Oates, i, p. 343.

Vernacular names. *Inrui-ba gajeba* (Kacha Naga).

Description. Differs from *P. s. squamata*, sex for sex, in being decidedly smaller and in having the upper plumage less marked with fulvous spots, these being both fewer and less distinct. On the other hand the median and greater coverts and innermost secondaries are more plentifully and more regularly spotted than they are in that bird.

The young are like those of *P. s. squamata*; the whole upper parts and wings unspotted rich rufous-brown and the lower parts dusky brown.

Colours of soft parts. Iris hazel to deep brown; bill dark, blackish-horny above, fleshy-horny below; legs fleshy-brown or pale horny-brown.

Measurements. Wing 40 to 52 mm.; tail about 12 mm.; tarsus 18 to 20 mm.; culmen 10 to 11 mm.

Distribution. Nepal, Sikkim, Assam North and South of the Brahmaputra to the extreme East; Chin Hills, Kachin Hills, Burma East through the Shan States to Karenni. Geographical races have been described from Sumatra (*lepida*), South Annam (*annamensis*), Malay Peninsula (*harterti*) and West Java (*rufa*).

Nidification. Except that the nests, whether of the ball type or built in amongst the moss on trees, average rather smaller than do those of the Scaly-breasted Wren, there is nothing one can add to the descriptions already given for the nests of that bird. The two breed together over much the same range at the same elevations and at the same time of year.

The eggs are exactly like those of the last bird in colour, shape and texture but fifty average smaller, 17·1 × 13·1 mm., whilst the extremes are as follows: maxima, **18·9** × 13·0 and 18·3 × **14·0** mm.; minima, **15·4** × 12·6 and 17·9 × **12·1** mm.

Habits. The same as those of *P. s. squamata*. Stevens found this Wren plentiful in the Plains during winter, obtaining it both North and South of the Brahmaputra in the undergrowth of forest. He observes that it is by no means difficult of approach at this season.

Genus **SPHENOCICHLA** Godwin-Austen & Walden, 1875.

The genus *Sphenocichla* contains two remarkable and but little-known birds. They are in appearance stout, rather squat and heavy-looking birds with very powerful feet and legs. The bill is perfectly conical and sharp-pointed when viewed laterally and is about the length of the head or a little shorter; there are no rictal bristles; the wing is short and rounded; the tail is of twelve feathers and greatly rounded, the outer feathers being about two-thirds the length of the central. The sexes are alike but the young are still unknown.

Key to Species.

A. Feathers of the throat and breast black with pale shafts .... *S. humei*, p. 461.
B. Feathers of breast ashy-brown with black margins and white submargins. *S. roberti*, p. 461.

(473) Sphenocichla humei.

HUME'S WEDGE-BILLED WREN.

Heterorhynchus humei Mandelli, S. F., i, p. 415 (1873) (Native Sikkim).
Sphenocichla humii. Blanf. & Oates, i, p. 336.

Vernacular names. None recorded.

Description. Whole upper plumage rich golden-brown, the feathers edged with black and all but those of the crown and nape narrowly barred with blackish; feathers of head, neck and interscapulars with white shafts, most conspicuous on the forehead; a

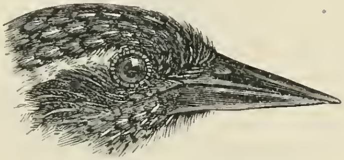


Fig. 91.—Head of *S. humei.*

broad white supercilium from the back of the eye breaking up into white spots on the sides of the neck; wings blackish-brown, the visible parts barred with dark golden-brown; chin, throat, breast and flanks dark brown with white shafts and the narrowest of white edges; belly ashy-grey; posterior flanks and under tail-coverts golden-brown.

Colours of soft parts. Irides dark brown; bill slate-colour, the culmen darker; legs dark brown.

Measurements. Wing 70 to 74 mm.; tail 64 to 71 mm.; tarsus 26 to 27 mm.; culmen 22 to 24 mm.

Distribution. Sikkim to the Abor Hills.

Nidification and Habits. Nothing recorded.

(474) Sphenocichla roberti.

ROBERT'S WEDGE-BILLED WREN.

Sphenocichla roberti Godw.-Aust. & Wald., Ibis, 1875, p. 251 (Hemeo, N. Cachar); Blanf. & Oates, i, p. 336.

Vernacular names. *Ting-linrui gadiba* (Kacha Naga).

Description. Above dark reddish golden-brown, the feathers of the head and mantle with darker margins and obsolete ashy

terminal spots; wings and tail the same barred with darker brown or blackish and the coverts with indistinct ashy tips; the wing-quills and rectrices are sometimes slightly reddish on the outer webs; ear-coverts brown with darker streaks; a short indistinct black and white supercilium; below from chin to abdomen golden-brown, edged with blackish and with broad white sub-edges disappearing on posterior flanks, abdomen and under tail-coverts.

Colours of soft parts. Iris rich brown; bill very pale bluish-slaty, the base of maxilla and culmen much darker; legs dark brown, the soles, claws and edges of scutellations pale slaty.

Measurements. Wing 71 to 74 mm.; tail 58 to 64 mm.; tarsus 26 to 27 mm.; culmen 25 mm.

Distribution. Assam, Hills South of the Brahmaputra. Godwin-Austen procured this Wren in North Cachar and Manipur; it was also obtained by me in the North Cachar and Khasia Hills, by Tytler in the Naga Hills, and Coltart had it brought in to him by the Trans-Dikku Nagas from somewhere near Margherita.

Nidification. On the 24th May, 1898, a bird of this species was brought to me by a Naga with nest and four eggs. The former was merely a mass of fine grasses, tendrils and bents with no lining, placed at the bottom of a long crevice in a large oak-tree, about 20 feet from the ground. The site selected, which I afterwards saw, was just such a one as would be used by a Tree-Creeper. The eggs are pure white, broad, rather pointed ovals; the shells are very fragile, partly owing to their being very hard set and had only the faintest gloss. Other eggs brought to me were quite similar and seven specimens vary between 20·7 × 17·0 and 22·3 × 17·4 mm.

Habits. The little I saw of the habits of this bird showed an approach both to the Wrens and Tree-Creepers. It was a very active climber about the rough bark of the bigger trees, though I never saw it on the higher branches; on the other hand, it hunted about in the undergrowths much as the Wrens do. It flew quite well with a direct, quick flight from tree to tree or bush to bush but seemed to prefer legs to wings as means of progression. I never heard its note and the contents of the stomach was entirely insectivorous, mostly wood-lice and small boring beetles. The Naga name *Ting-linrui* is applied to all the Wrens and Creepers with some qualifying adjective following. These natives, who are extraordinarily close observers, say that this bird is a true Tree-Creeper in all its actions.

Genus **TESIA** Hodgson, 1837.

It is with some diffidence I include this genus in the *Troglodytidæ.* Its bill, short rounded wing, long legs and large feet all point to a position in this family, whilst the character of its habits and nidification confirms the classification. On the other

hand, the presence of rictal bristles might induce some ornithologists to place the genus in a family by itself, leading from the *Troglodytidæ* to the Short-winged Chats, *Brachypteryginæ*.

In *Tesia* the bill is equal to or rather more than half the length of the head, broad at the base and compressed at the tip. The wings are very short and rounded, the tail so short as to be invisible and the tarsi and feet very long. The male and female are alike but the young differ considerably from the adult though they are not spotted or barred as in the Shortwings or paler than the adult as in *Timaliidæ*.

Key to Species.

A. Crown golden-brown .... *T. cyaniventer*, p. 463.
B. Crown bright chestnut .... *T. castaneocoronata*, p. 465.

Fig. 92.—Head of *T. c. cyaniventer*.

(475) Tesia cyaniventer cyaniventer.

THE SLATY-BELLIED WREN.

Tesia cyaniventer Hodgson, J. A. S. B., vi, p. 101 (1837) (Nepal).
Tesia cyaniventris. Blanf. & Oates, i, p. 192.

Vernacular names. *Tisi* (Nepal); *Samtit-tammong* (Lepcha); *Ting-linrui bermai-ga* (Kacha Naga).

Description. The forehead, chin and nape glistening golden olive-brown, the yellow more pronounced at the sides of the crown where it forms a fairly definite supercilium; the rest of the upper plumage and the visible portions of the closed wings and tail olive-green; lores and a broad stripe from the lores to the nape black; sides of the head and whole lower plumage slaty-blue.

Colours of soft parts. Iris brown, sometimes, according to Cockburn, vermilion; bill above and on the tip of the lower mandible dark brown, the remainder pale horny, often yellowish or tinged with orange; legs and feet pale fleshy to pale dull fleshy-brown.

Measurements. Length about 100 mm.; wing about 44 to 47 mm.; tail about 20 mm.; tarsus 24 mm.; culmen 11 to 12 mm.

The adult female is similar to the male and does *not* differ as described by Oates.

The young bird has the whole upper plumage rather rufescent-green and the lower parts dull, dark olive-green. The black line

through the eye is acquired during the summer with the completion of the first plumage, but the full brightness of the adult plumage not until the following moult.

Distribution. Garhwal, Nepal, Sikkim, the whole of Assam North and South of the Brahmaputra, Chin, Kachin Hills and possibly Annam. McClelland's *olivea*, a name given to Assam birds, cannot stand, as the Assam birds differ in no way from the Nepal and Sikkim birds and I have seen specimens from the Kachin Hills every bit as bright above and as dark below as any specimen from those countries. They vary very greatly individually and large series are necessary for comparison.

Nidification. The Slaty-bellied Wren breeds in April, May and June South of the Brahmaputra and in June and July North of it, at all heights between 3,000 and 10,000 feet. The nest is a beautiful ball of bright green moss lined with moss roots and measuring some 5 inches in diameter, or, according to Hodgson, more oval in shape, measuring about 7 × 5 inches. It may be placed either in a tangle of creepers or in dense, long moss against a tree or stump, or may be built in amongst the numerous branches of a thick, low bush, whilst, very rarely, it may be placed on a steep bank or against a rock or heap of boulders.

The eggs number three or four, very rarely five and vary considerably in appearance. The ground-colour is a very pale pink, often with a yellowish-salmon tint; the markings consist of reddish-pink specks and spots, sometimes so fine and so numerous as to make the eggs look an almost uniform terra-cotta, at other times sparser and much bolder, showing up well against the ground-colour and more numerous at the larger end than elsewhere. In shape they are normally rather long but blunt ovals. Fifty eggs average 17·4 × 12·9 mm. and the extremes are: maxima, 19·1 × 13·1 and 17·9 × 13·6 mm.; minima, 16·8 × 13·2 and 18·0 × 12·0 mm.

Habits. This Wren is found over a greater range of altitude than any of the others with the exception of the next bird. It is certainly found up to at least 10,000 feet in Sikkim in summer, whilst, on the other hand, Stevens found it right down amongst the foothills and broken ground on the North bank of the Brahmaputra, but it must be remembered that in temperature the plains of North and North-East Assam are equivalent to an altitude of at least 2,000 feet South of the river and in Burma. It is a purely forest bird, preferring forests which have an ample undergrowth in which it can skulk about without showing itself. It is very loth to take flight and if one can mark it into a dense isolated bush it can easily be caught with a butterfly net. It much affects the vicinity of tiny water-courses through boulders and dense evergreen forest, and its high, shrill note may be heard mornings and evenings above the ripple of the water. It is exclusively insectivorous.

(476) Tesia castaneocoronata castaneocoronata.

THE CHESTNUT-HEADED WREN.

Sylvia castaneocoronata Burton, P. Z. S., 1835, p. 152 (152).
Oligura castaneicoronata. Blanf. & Oates, i, p. 193.

Vernacular names. *Tisi* (Nepal); *Samtit-pho* (Lecha).

Fig. 93.—Head of *T. c. castaneocoronata.*

Description. Forehead, crown, nape, lores, ear-coverts and a line under the eyes bright chestnut; a small patch of white feathers at the posterior corner of the eye; cheeks, chin, throat, breast and abdomen bright yellow, the breast suffused with olivaceous and mottled with a few indistinct brown bars; sides of breast, abdomen and under tail-coverts olivaceous; upper plumage, wings and tail dark olive-green.

Colours of soft parts. Iris brown to red; bill yellowish-horny or brownish-yellow; legs fleshy-yellow.

Measurements. Length about 100 mm.; wing 43 to 48 mm.; tail about 15 mm.; tarsus 23 mm.; culmen about 10 to 11 mm.

Distribution. Himalayas from Garhwal to the extreme East of Assam; the Khasia, Naga and Cachar Hills South of the Brahmaputra but not recorded from Manipur or farther South and East.

Nidification. The Chestnut-headed Wren breeds between 6,000 and 8,000 feet in the months of June and July, building a nest much like that of the last bird but less well put together and lined with feathers instead of roots. During the breeding season it haunts oak and other forests where there is ample undergrowth and where the moss and parasitic plants are luxuriant. The nest is placed either in a bush or low branch of a tree and no attempt seems to be made at concealment, though in appearance it is so like the numerous clumps of moss which are to be seen in every direction that it would never attract attention. Occasionally a nest may be found in amongst the moss on a tree-trunk or hanging from a branch and in such cases they are very difficult to detect. The eggs number three or, less often, four and are like those of the Slaty-bellied Wren but usually much darker and richer in colouring. Fifteen eggs average 17·4 × 12·9 mm. and the extremes are: maxima, 18·3 × 13·4 mm. and minima, 16·8 × 12·4 mm. A larger series would probably give a smaller average.

Habits. The Chestnut-headed Wren has been found as high as 11,000 feet in Sikkim and, on the other hand, Stevens has found them in the low foot-hills of the Assam Himalayas. In their haunts and actions they very closely resemble *Tesia cyaniventer*. Osmaston says:—"This pretty little bird, like *Tesia*, has the habits of a Wren and frequents brushwood under high forest, rarely ascending more than a few feet above the ground. It is common in the neighbourhood of Darjeeling at all elevations up to 8,000 feet, according to season.

"It has a shrill call of four notes resembling that of *Culicicapa ceylonensis* which it utters as it moves restlessly about in thick cover."

It is entirely insectivorous in its diet and just as averse to taking flight as is the Slaty-bellied Wren.

ALPHABETICAL INDEX.

[*Synonyms in italics.*]

abbotti (*Malacocincla*), 260.
abbotti (*Turdinus*), 260.
Acanthoptila, 203.
Actinodura, 303.
Ægithaliscus, 93.
Ægithina, 339.
æmodium (Conostoma), 104.
æmodium (*Conostoma*), 104.
æmodius (*Conostoma*), 104.
æmodius (*Lophophanes*), 84.
æmodius (*Parus*), 84.
æralatus (*Pteruthius*), 333.
æralatus æralatus (Pteruthius), 333.
Aethorhynchus, 337.
Æthostoma, 259.
affine (*Trochalopterum*), 172.
affine affine (Trochalopterum), 172.
affinis (*Garrulax*), 172.
albigularis (*Dumetia*), 229.
albigularis (*Malacocercus*), 229.
albigularis (*Pomatorhinus*), 215.
albigularis abuensis (Dumetia), 230.
albigularis abuensis (*Dumetia*), 230.
albigularis albigularis (Dumetia), 229.
albogularis (*Garrulax*), 153.
albogularis (*Ianthocincla*), 153.
albogularis albogularis (Garrulax), 153.
albogularis whistleri (Garrulax), 154.
albogularis whistleri (*Garrulax*), 154.
Alcippe, 275.
Alcurus, 379.
Alophoixus, 367.
alpinus (*Pyrrhocorax*), 70.
altirostris (*Chrysomma*), 235.
altirostris (*Pyctorhis*), 235.
altirostris altirostris (Pyctorhis), 235.
altirostris griseigularis (Pyctorhis), 236.
altirostris scindicus (Pyctorhis), 237.
altirostris scindicus (*Pyctorhis*), 237.
ampelina (*Yuhina*), 318.
ampelinus (Hypocolius), 357.
ampelinus (*Hypocolius*), 357.
analis (*Pycnonotus*), 410.
analis (*Turdus*), 410.
andamanensis (*Corvus*), 29.
annectens (*Leioptila*), 300.
annectens (*Lioptila*), 300.
annectens annectens (Leioptila), 300.
annectens davisoni (Leioptila), 302.
annectens saturata (Leioptila), 301.
aplonotus (*Parus*), 92.
argentauris (*Mesia*), 354.
argentauris argentauris (Mesia), 354.
Argya, 196.
assamensis (Drymocataphus), 248.
assimilis (*Dendrocitta*), 53.
assimilis (*Stachyris*), 267.
ater æmodius (Lophophanes), 84.
atricapillus (*Molpastes*), 387.
atriceps (*Brachypteryx*), 281.
atriceps (*Parus*), 74.
atriceps (Rhopocichla), 281.
atriceps (*Rhopocichla*), 281.
atriceps atriceps (Rhopocichla), 281.
atriceps bourdilloni (Rhopocichla), 282.
atriceps nigrifrons (Rhopocichla), 282.
atrosuperciliaris (*Suthora*), 114.
aurifrons (*Chloropsis*), 346.
aurifrons (*Phyllornis*), 346.
aurifrons aurifrons (Chloropsis), 346.
aurifrons davidsoni (Chloropsis), 348.
aurifrons davidsoni (*Chloropsis*), 348.
aurifrons inornata (Chloropsis), 349.
aurifrons inornatus (*Chloropsis*), 349.
aurigasterxanthorrhous(Pycnonotus), 411.

austeni (*Grammatoptila*), 185.
austeni (*Ianthocincla*), 160.
austeni (*Pomatorhinus*), 218.
austeni (*Proparus*), 291.
austeni (*Trochalopteron*), 160.
austeni austeni (Ianthocincla), 160.
austeni victoriæ (Ianthocincla), 161.

Babax, 187.
bactriana (*Pica*), 38.
bayleyi (Dendrocitta), 55.
bayleyi (*Dendrocitta*), 55.
beavani (*Lophophanes*), 86.
belangeri (*Garrulax*), 148.
bengalensis (*Molpastes*), 387.
bengalensis (*Timalia*), 226.
bicolor (*Brachypteryx*), 258.
bicolor (Erythrocichla), 258.
bicolor (*Erythrocichla*), 258.
binghami (*Stachyris*), 266.
bispecularis (Garrulus), 63.
bispecularis (*Garrulus*), 63.
bispecularis bispecularis (Garrulus), 63.
bispecularis haringtoni (Garrulus), 65.
bispecularis interstinctus (Garrulus), 64.
bispecularis interstinctus (*Garrulus*), 64
bispecularis persaturatus (Garrulus), 65.
bispecularis persaturatus (*Garrulus*), 65.
blanfordi (*Pycnonotus*), 420.
bocharensis var. *intermedius* (*Parus*), 76.
bonvaloti (Ægithaliscus), 96.
bonvaloti (*Ægithaliscus*), 96.
bonvaloti bonvaloti (Ægithaliscus), 96.
bonvaloti sharpei (Ægithaliscus), 97.
bottanensis (*Pica*), 39.
bourdilloni (*Alcippe*), 282.
bourdilloni (*Rhopocichla*), 282.
brevicaudata (*Corythocichla*), 251.
brevicaudatus (*Turdinus*), 251.
brevicaudatus brevicaudatus (Turdinulus), 251.
brevicaudatus striatus (Turdinulus), 251.
brevicaudatus venningi (Turdinulus), 252.
brevicaudatus venningi (*Turdinulus*), 252.
brucei (*Alcippe*), 278.
brunnea (*Suthora*), 112.
brunneicauda (*Minla*), 289.
burmanicus (*Criniger*), 364.
burmanicus (*Molpastes*), 315.

cachinnans (*Crateropus*), 176.
cachinnans (Trochalopterum), 176.
cachinnans (*Trochalopterum*), 176.
cachinnans cachinnans (Trochalopterum), 176.
cachinnans cinnamomeum (Trochalopterum), 177.
cærulatus (*Cinclosoma*), 141.
cærulatus (*Dryonastes*), 141.
cærulatus cærulatus (Dryonastes), 141.
cærulatus kaurensis (Dryonastes), 143.
cærulatus subcærulatus (Dryonastes), 142.
callipyga (*Bahila*), 328.
canifrons (*Spizixus*), 400.
canifrons canifrons (Spizixus), 400.
canorus (*Crateropus*), 191.
capistrata (*Lioptila*), 296.
capistrata capistrata (Leioptila), 296.
capistrata pallida (Leioptila), 298.
capistrata pallida (*Lioptila*), 298.
capistratum (*Cinclosoma*), 296.
castaneicauda (*Siva*), 314.
castaneiceps (*Ixulus*), 310.
castaneiceps (*Minla*), 288.
castaneiceps (*Sittiparus*), 288.
castaneiceps (Staphidia), 310.
castaneiceps (*Staphidia*), 310.
castaneiceps brunneicauda (Pseudominla), 289.
castaneiceps castaneiceps (Pseudominla), 288.
castaneicoronata (*Oligura*), 465.
castaneiventris (*Sitta*), 123.
castaneiventris castaneiventris (Sitta), 123.
castaneiventris cinnamoventris (Sitta), 125.
castaneiventris neglecta (Sitta), 126.
castaneocoronata (*Sylvia*), 465.
castaneocoronata castaneocoronata (Tesia), 465.
castanoptera (Leioptila), 300.
castanoptera (*Lioptila*), 300.
castanoptera (*Malacias*), 300.
caryocatactes hemispila (Nucifraga), 66.
caudata (*Argya*), 198.
caudata (*Tesia*), 456.
caudata (*Urocichla*), 456.
caudata caudata (Argya), 198.
caudata huttoni (Argya), 199.
caudatus (*Cossyphus*), 198.
caudatus (Spelæornis), 456.
Cerasophila, 373.
Certhia, 428.
Certhiidae, 428.
chinensis (*Cissa*), 45.
chinensis (*Coracias*), 45.
chinensis (*Dryonastes*), 141.

chinensis chinensis (Cissa), 45.
chinensis leucogenys (Dryonastes), 141.
chlorocephala (*Chloropsis*), 350.
chlorocephalus (*Phyllornis*), 350.
Chloropsis, 346.
chocolatina (*Pnoepyga*), 453.
chrysæa (*Stachyris*), 265.
chrysæa assimilis (Stachyris), 267.
chrysæa binghami (Stachyris), 266.
chrysæa chrysæa (Stachyris), 265.
chrysæa chrysops (Stachyris), 267.
chrysæa chrysops (*Stachyris*), 267.
chrysæus (*Lioparus*), 293.
chrysoptera (*Ianthocincla*), 166.
chrysopterum (*Trochalopterum*), 166.
chrysorrhoides (*Hæmatornis*), 387.
chrysotis (Lioparus), 293.
chrysotis (*Proparus*), 293.
cineracea (*Ianthocincla*), 156.
cineracea cineracea (Ianthocincla), 156.
cineracea styani (Ianthocincla), 157.
cineraceum (*Trochalopterum*), 156.
cinerea (*Minla*), 287.
cinerea (Pseudominla), 287.
cinereifrons (*Crateropus*), 196.
cinereifrons (*Garrulax*), 196.
cinereifrons (Turdoides), 196.
cinereiventris (*Brachypodius*), 426.
cinereiventris (*Micropus*), 426.
cinereiventris (Microtarsus), 426.
cinereus (*Parus*), 74.
cinereus (*Sittiparus*), 287.
cinnamomeoventris (*Sitta*), 125.
cinnamomeum (*Trochalopterum*), 177.
cinnamomeus (*Drymocataphus*), 244.
cinnamoventris (*Sitta*), 125.
Cissa, 45.
clarkii (*Ixulus*), 324.
commixtus (*Parus*), 78.
communis korejewi (*Parus*), 82.
concolor (*Hypsipetes*), 372.
concinnus (Ægithaliscus), 93.
concinnus iredalei (Ægithaliscus), 93.
concinnus iredalei (*Ægithaliscus*), 93.
concinnus magnipurensis (Ægithaliscus), 94.
concinnus pulchellus (Ægithaliscus), 95.
concinnus talifuensis (Ægithaliscus), 95.
Conostoma, 103.
corax (Corvus), 21.
corax (*Corvus*), 21, 23.
corax lawrencei (Corvus), 21.
corax tibetanus (Corvus), 23.
cornix (*corvus*), 32.
cornix sharpii (Corvus), 32.
coronatus (*Ægithalus*), 100.
coronatus (Remiz), 100.
corone (*Corvus*), 24.
corone orientalis (Corvus), 24.
coronoides (Corvus), 25.
coronoides andamanensis (Corvus), 29.
coronoides culminatus (Corvus), 28.
coronoides intermedius (Corvus), 28.
coronoides levaillanti (Corvus), 27.
Corvidæ, 18.
Corvus, 20.
corvus ruficollis (Corvus), 23.
craddocki (*Suthora*), 111.
Criniger, 361.
criniger (*Brachypodius* (?)), 366.
criniger (*Tricholestes*), 366.
criniger criniger (Tricholestes), 356.
crispifrons (Cursonia), 249.
crispifrons (*Gypsophila*), 249.
crispifrons (*Turdinus*), 249.
Crypsirhina, 56.
cucullata (Crypsirhina), 57.
cucullata (*Crypsirhina*), 57.
cucullata (*Urocissa*), 44.
culminatus (*Corvus*), 28.
Cursonia, 248.
Cutia, 329.
cyaniventer (*Tesia*), 463.
cyaniventer cyaniventer (Tesia), 463.
cyaniventris (*Pycnonotus*), 416.
cyaniventris (*Tesia*), 463.
cyaniventris cyaniventris (Pycnonotus), 416.
Cyanoderma, 271.
cyanopogon (Chloropsis), 353.
cyanopogon (*Chloropsis*), 353.
cyanopogon (*Phyllornis*), 353.
cyanouroptera (*Siva*), 314.
cyanouroptera cyanouroptera (Siva), 314.
cyanouroptera oatesi (Siva), 316.
cyanouroptera oatesi (*Siva*), 316.
cyanouroptera sordida (Siva), 316.
cyanouroptera wingatei (Siva), 315.
cyanus tianschanicus (Parus), 81.
cyanus var. *tianschanicus* (*Cyanistes*), 81.

daflaensis (*Actinodura*), 309.
daflaensis (*Ixops*), 309.
davidiana thompsoni (Neosuthora), 115.
davisoni (*Hemixus*), 376.
davisoni (*Ixus*), 413.
davisoni (*Lioptila*), 302.
davisoni (*Stachyris*), 265.
davisoni (*Turdinulus*), 254.
delesserti (*Crateropus*), 149.
delesserti (Garrulax), 149.
delesserti (*Garrulax*), 149.
Dendrocitta, 47.

diademata ampelina (Yuhina), 318.
diardi (*Garrulax*), 148.
diardi (*Turdus*), 148).
dichrous (Lophophanes), 86.
dichrous (*Lophophanes*), 87.
dichrous (*Parus*), 87.
dichrous dichrous (Lophophanes), 87.
dichrous wellsi (Lophophanes), 87.
dichrous wellsi (*Lophophanes*), 87.
discolor (Certhia), 435.
discolor (*Certhia*), 435.
discolor discolor (Certhia), 435.
discolor fuliginosa (Certhia), 438.
discolor manipurensis (Certhia), 437.
discolor victoriæ (Certhia), 437.
Dryonastes, 138.
dubius (*Proparus*), 283.
dubius (*Schœniparus*), 283.
dubius dubius (Schœniparus), 283.
dubius genestieri (Schœniparus), 285.
dubius mandellii (Schœniparus), 284.
Dumetia, 228.

earlii (Argya), 197.
earlii (*Argya*), 197.
earlii (*Malacocercus*), 197.
egertoni (*Actinodura*), 303.
egertoni egertoni (Actinodura), 303.
egertoni khasiana (Actinodura), 304.
egertoni ripponi (Actinodura), 305.
Elachura, 448.
emeria (*Lanius*), 394.
emeria (*Otocompsa*), 394.
emeria emeria (Otocompsa), 394.
emeria fuscicaudata (Otocompsa), 396.
emeria peguensis (Otocompsa), 396.
epilepidotus bakeri (Turdinulus), 255.
epilepidotus bakeri (*Turdinulus*), 255.
epilepidotus davisoni (Turdinulus), 254.
eremita (*Graculus*), 68.
Erpornis, 324.
erythrocephalum (Cinclosoma), 163.
erythrocephalum (Trochalopterum), 162.
erythrocephalum (*Trochalopterum*), 163.
erythrocephalum chrysopterum (Trochalopterum), 166.
erythrocephalum erythrocephalum (Trochalopterum), 163.
erythrocephalum erythrolæma (Trochalopterum), 164.
erythrocephalum godwini (Trochalopterum), 165.
erythrocephalum godwini (*Trochalopterum*), 165.
erythrocephalum melanostigma (Trochalopterum), 167.
erythrocephalum nigrimentum (Trochalopterum), 164.
erythrocephalum ramsayi (Trochalopterum), 168.
erythrocephalum woodi (Trochalopterum), 166.
erythrocephalum woodi (*Trochalopterum*), 166.
erythrocephalus (*Ægithaliscus*), 93.
Erythrocichla, 258.
erythrogenys (Pomatorhinus), 219.
erythrogenys (*Pomatorhinus*), 220.
erythrogenys erythrogenys (Pomatorhinus), 220.
erythrogenys gravivex (Pomatorhinus), 221.
erythrogenys haringtoni (Pomatorhinus), 220.
erythrogenys imberbis (Pomatorhinus), 222.
erythrogenys mcclellandi (Pomatorhinus), 221.
eythrolæma (*Trochalopterum*), 164.
erythrophthalmus (*Ixos*), 422.
erythrophthalmus erythrophthalmus (Pycnonotus), 422.
erythroptera (*Timalia*), 271.
erythroptera erythroptera (Cyanoderma), 271.
erythropterum (*Cyanoderma*), 271.
erythropterus (*Lanius*), 331.
erythropterus (Pteruthius), 331.
erythropterus (*Pteruthius*), 331.
euptilosa (*Pinarocichla*), 399.
europæa nagaensis (Sitta), 127.
eutilota (Pinarocichla), 399.
eutilotus (*Brachypus*), 399.

fairbanki (*Trochalopterum*), 178.
familiaris (Certhia), 432.
familiaris hodgsoni (Certhia), 434.
familiaris khamensis (Certhia), 434.
familiaris nepalensis (Certhia), 433.
feæ (*Suthora*), 111.
ferruginosus (Pomatorhinus), 231.
ferruginosus (*Pomatorhinus*), 213.
ferruginosus albigularis (Pomatorhinus), 215.
ferruginosus ferruginosus (Pomatorhinus), 213.
ferruginosus mariæ (Pomatorhinus), 215.
ferruginosus phayrei (Pomatorhinus), 214.
finlaysoni (Pycnonotus), 412.
finlaysoni (*Pycnonotus*), 412.
finlaysoni davisoni (Pycnonotus), 413.
finlaysoni finlaysoni (Pycnonotus), 412.
flavala (*Hemixus*), 374.

flavala davisoni (Hemixus), 376.
flavala flavala (Hemixus), 374.
flavala hildebrandi (Hemixus), 376.
flaveolus (*Criniger*), 363.
flaveolus (*Trichophorus*), 363.
flavescens (*Pycnonotus*), 392.
flavescens (*Xanthixus*), 392.
flavescens flavescens (Xanthixus), 392.
flavescens vividus (Xanthixus), 393.
flavescens vividus (*Xanthixus*), 393.
flavicollis (*Ixulus*), 322.
flavicollis (*Yuhina*), 322.
flavicollis baileyi (Ixulus), 323.
flavicollis baileyi (*Ixulus*), 323.
flavicollis flavicollis (Ixulus), 323.
flavicollis harterti (Ixulus), 323.
flavicollis harterti (*Ixulus*), 323.
flavirostris (Paradoxornis), 105.
flavirostris (*Paradoxornis*), 105.
flavirostris (*Psilorhinus*), 43.
flavirostris (Urocissa), 43.
flavirostris (*Urocissa*), 43.
flavirostris cucullata (Urocissa), 44.
flavirostris flavirostris (Urocissa), 43.
flaviventris (*Otocompsa*), 397.
flaviventris (*Vanga*), 397.
flaviventris flaviventris (Otocompsa), 397.
flaviventris minor (Otocompsa), 398.
flaviventris minor (*Otocompsa*), 398.
flavocristatus (*Parus*), 102.
formosa (Elachura), 449.
formosa (Sitta), 131.
formosa (*Sitta*), 131.
formosus (*Troglodytes*), 449.
fratercula (*Alcippe*), 277.
frontalis (Dendrocitta), 54.
frontalis (*Dendrocitta*), 54.
frontalis (*Sitta*), 132.
frontalis frontalis (Sitta), 132.
frugilegus (*Corvus*), 30.
frugilegus tschusii (Corvus), 30.
frugilegus tchusii (*Corvus*), 30.
Fulvetta, 289.
fulvifrons (*Suthora*), 113.
fulvifrons (*Temnoris*), 113.
fulvifrons fulvifrons (Suthora), 113.
fuscicapillum (*Pellorneum*), 245.
fuscicapillum babaulti (Pellorneum), 245.
fuscicapillum babaulti (*Scotocichla*), 245.
fuscicapillum fascicapillum (Pellorneum), 245.
fuscicapillus (*Drymocataphus*), 245.
fuscicaudata (*Otocompsa*), 396.
fusciflavescens (*Brachypodius*), 425.
fusciflavescens (*Micropus*), 425.

galbanus (Dryonastes), 145.
galbanus (*Dryonastes*), 145.
galbanus (Garrulax), 145.
Gampsorhynchus, 230.
ganeesa (*Hypsipetes*), 372.
Garrulax, 145.
Garrulus, 59.
genestieri (*Alcippe*), 285.
goiavier analis (Pynconotus), 410.
gracilis (*Hypsipetes*), 298.
gracilis (Leioptila), 298.
gracilis (*Lioptila*), 298.
graculus (*Corvus*), 70.
graculus (Pyrrhocorax), 70.
Grammatoptila, 184.
gravivox (*Pomatorhinus*), 221.
griseiceps (*Criniger*), 365.
griseigularis (*Pyctorhis*), 236.
griseus (*Crateropus*), 193, 194.
griseus (*Turdus*), 193.
griseus griseus (Turdoides), 193.
griseus striatus (Turdoides), 194.
gularis (Argya), 199.
gularis (*Argya*), 199.
gularis (*Brachypus*), 415.
gularis (*Chatarrhœa*), 199.
gularis (Garrulax), 152.
gularis (*Garrulax*), 152.
gularis (*Ianthocincla*), 152.
gularis (*Mixornis*), 274.
gularis (*Paradoxornis*), 118.
gularis (Pycnonotus), 415.
gularis (*Pycnonotus*), 415.
gularis (Scæorhynchus), 118.
gularis (*Yuhina*), 317.
gularis craddocki (Suthora), 111.
gularis gularis (Psittiparus), 118.
gularis gularis (Yuhina), 317.
gularis minor (*Mixornis*), 274.
gularis transfluvialis (Psittiparus), 118.
gularis transfluvialus (*Scæorhynchus*), 118.
gularis yangpiensis (Yuhina), 318.
guttata (Thringorhina), 262.
guttata (*Thringorhina*), 262.
guttaticollis (Paradoxornis), 106.
guttaticollis (*Paradoxornis*), 106.
guttaticollis (*Turdinulus*), 254.
guttatus (*Turdinus*), 262.
gutturalis (*Criniger*), 362.

hæmorrhous (*Molpastes*), 383.
hæmorrhous (*Muscicapa*), 383.
hæmorrhous bengalensis (Molpastes), 387.
hæmorrhous burmanicus (Molpastes), 385.
hæmorrhous chrysorrhoides (Molpastes), 387.
hæmorrhous hæmorrhous (Molpastes), 383.

hæmorrhous intermedius (Molpastes), 389.
hæmorrhous nigripileus (Molpastes), 386.
hæmorrhous pallidus (Molpastes), 385.
hæmorrhous pallidus (*Molpastes*), 385.
hardwickii (*Chloropsis*), 349.
hardwickii hardwickii (Chloropsis), 349.
haplonota (Elachura), 450.
haplonota (*Elachura*), 450.
haplonotus (Machlolophus), 92.
haringtoni (*Garrulus*), 65.
haringtoni (*Pomatorhinus*), 220.
hemispila (*Nucifraga*), 66.
Hemixus, 374.
henrici (Trochalopterum), 183.
henrici (*Trochalopterum*), 183.
Hilarocichla, 336.
hildebrandi (*Hemixus*), 376.
himalayana (Certhia), 428.
himalayana (*Certhia*), 430.
himalayana himalayana (Certhia), 430.
himalayana intermedia (Certhia), 432.
himalayana intermedia (*Certhia*), 432.
himalayana tæniura (Certhia), 431.
himalayana yunnanensis (Certhia), 432.
himalayensis (*Dendrocitta*), 52.
himalayensis (Sitta), 122.
himalayensis (*Sitta*), 122.
hodgsoni (*Certhia*), 434.
holerythrops (*Trochalopterum*), 164.
holti binghami (*Iole*), 379.
Horizillas, 257.
horsfieldi (Pomatorhinus), 210.
horsfieldi (*Pomatorhinus*), 210.
horsfieldi horsfieldi (Pomatorhinus), 210.
horsfieldi melanurus (Pomatorhinus), 212.
horsfieldi obscurus (Pomatorhinus), 211.
horsfieldi travancoriensis (Pomatorhinus), 211.
horsfieldi travancoriensis (*Pomatorhinus*), 211.
humei (*Heterorhynchus*), 461.
humei (Sphenocichla), 461.
humei (*Sphenocichla*), 461.
humii (*Molpastes*), 391.
humii (*Suthora*), 110.
humilis (*Ixulus*), 324.
humilis (Podoces), 71.
humilis (*Podoces*), 71.
humilis clarkii (Ixulus), 324.
humilis humilis (Ixulus), 324.
huttoni (*Malacocercus*), 199.
hyperythra (Dumetia), 228.
hyperythra (*Dumetia*), 228.
hyperythra (*Timalia*), 228.
Hypocolius, 356.
hypoleucus (*Othorhinus*), 222.
hypoleucus (Pomatorhinus), 222.
hypoleucus (*Pomatorhinus*), 222.
hypoleucus hypoleucus (Pomatorhinus), 222.
hypoleucus tickelli (Pomatorhinus), 223.

Ianthocincla, 155.
icterica (Iole), 405.
icterica (*Iole*), 405.
ictericus (*Criniger*), 405.
icterocephala chlorocephala (Chloropsis), 350.
ignotincta (Minla), 355.
ignotincta (*Minla*), 355.
ignotum (*Pellorneum*), 243.
ignotum cinnamomeum (Pellorneum), 244.
ignotum ignotum (Pellorneum), 243.
imberbis (*Pomatorhinus*), 222.
imbricatum (*Trochalopterum*), 183.
imbricatus (*Garrulax*), 183.
insolens (*Corvus*), 34.
intermedius (*Allotrius*), 335.
intermedius (*Corvus*), 28.
intermedius (*Molpastes*), 389.
intermedius (*Pteruthius*), 335.
intermedius (*Pycnonotus*), 289.
Iole, 403.
ioschistos (Ægithaliscus), 99.
ioschistos (*Ægithaliscus*), 99.
ioschistos (*Parus*), 99.
Ixops, 307.
Ixulus, 321.

jerdoni (Chloropsis), 382.
jerdoni (*Chloropsis*), 352.
jerdoni (*Garrulax*), 177.
jerdoni (*Phyllornis*), 352.
jerdoni (*Timalia*), 227.
jerdoni (Trochalopterum), 177.
jerdoni (*Trochalopterum*), 177.
jerdoni fairbanki (Trochalopterum), 178.
jerdoni jerdoni (Trochalopterum), 177.
jerdoni meridionale (Trochalopterum), 178.

kashmiriensis (Sitta), 128.
kashmiriensis (*Sitta*), 128.
kaurensis (Dryonastes), 143.

kauriensis (*Urocichla*), 454.
Kelaartia, 426.
khamensis (*Certhia*), 434.
khasiana (*Actinodura*), 304.

lafresnayi (Aethorhynchus), 338.
lafresnayi (*Aethorhynchus*), 338.
lafresnayi (*Iora*), 338.
lanceolatus (Garrulus), 60.
lanceolatus (*Garrulus*), 60.
lanceolatus (*Pterorhinus*), 187.
lanceolatus lanceolatus (Babax), 187.
lanceolatus victoriæ (Babax), 188.
laurencii (*Corvus*), 21.
Leioptila, 296.
leucogastra (Dendrocitta), 51.
leucogastra (*Dendrocitta*), 51.
leucogenys (Ægithaliscus), 97.
leucogenys (*Ægithaliscus*), 97.
leucogenys (*Brachypus*), 389.
leucogenys (*Crateropus*), 141.
leucogenys (*Molpastes*), 389.
leucogenys (*Orites*), 97.
leucogenys humii (Molpastes), 391.
leucogenys leucogenys (Molpastes), 389.
leucogenys leucotis (Molpastes), 399.
leucolophus (*Corvus*), 146.
leucolophus (*Garrulax*), 146.
leucolophus belangeri (Garrulax), 148.
leucolophus diardi (Garrulax), 148.
leucolophus leucolophus (Garrulax), 146.
leucopsis (*Sitta*), 130.
leucopsis leucopsis (Sitta), 130.
leucopterus (*Glaucopsis*), 58.
leucopterus (Platysmurus), 58.
leucopterus (*Platysmurus*), 58.
leucotis (Garrulus), 61.
leucotis (*Garrulus*), 61.
leucotis (*Ixos*), 390.
leucotis (*Molpastes*), 390.
leucotis leucotis (Garrulus), 61.
leucotis oatesi (Garrulus), 62.
levaillanti (*Corvus*), 27.
lineatum (*Cinclosoma*), 180.
lineatum (Trochalopterum), 180.
lineatum (*Trochalopterum*), 180.
lineatum gilgit (*Ianthocincla*), 182.
lineatum gilgit (Trochalopterum), 182.
lineatum griseicentior (*Ianthocincla*), 181.
lineatum griseicentior (Trochalopterum), 181.
lineatum imbricatum (Trochalopterum), 183.
lineatum lineatum (Trochalopterum), 180.
lineatum ziaratensis (Trochalopterum), 182.
lineatum ziaratensis (*Ianthocincla*), 182.
Lioparus, 293.
Liothrix, 327.
Liotrichinæ, 326.
longicaudata (*Pnoepyga*), 452.
longicaudata (*Urocichla*), 452.
longicaudatus (Spelæornis), 451.
longicaudatus chocolatinus (Spelæornis), 453.
longicaudatus kauriensis (Spelæornis), 454.
longicaudatus longicaudatus (Spelæornis), 452.
longicaudatus oatesi (Spelæornis), 455.
longicaudatus reptatus (Spelæornis), 455.
longicaudatus sinlumensis (Spelæornis), 453.
longirostris (Argya), 202.
longirostris (*Argya*), 202.
longirostris (*Pyctorhis*), 202.
lönnbergi (*Criniger*), 408.
Lophophanes, 83.
lutea (Liothrix), 327.
lutea (*Liothrix*), 328.
lutea callipyga (Liothrix), 328.
lutea yunnanensis (Liothrix), 329.
lutea yunnanensis (*Liothrix*), 329.
luteolus (*Hæmatornis*), 417.
luteolus (Pycnonotus), 417.
luteolus (*Pycnonotus*), 417.

macclellandi (*Hemixus*), 377.
macclellandi (*Hypsipetes*), 377.
macclellandi (*Pomatorhinus*), 221.
macclellandi binghami (Hemixus), 379.
macclellandi macclellandi (Hemixus), 377.
macclellandi tickellii (Hemixus), 378.
Machlolophus, 89.
macrorhynchus (*Corvus*), 27, 28, 29.
magna (Sitta), 128.
magna (*Sitta*), 128.
magna magna (Horizillas), 257.
magnirostre (*Alcippe*), 258.
magnirostre (Horizillas), 258.
magnirostre (*Malacopterum*), 258.
magnirostris (*Alcippe*), 280.
magnirostris (*Psilorhinus*), 42.
magnum (*Malacopterum*), 257.
major (Parus), 73.
major cinereus (Parus), 74.
major commixtus (Parus), 78.
major intermedius (Parus), 76.
major kaschmiriensis (Parus), 76.

major kaschmiriensis (*Parus*), 76.
major mahrattarum (Parus), 77.
major mahrattarum (*Parus*), 77.
major planorum (Parus), 77.
major planorum (*Parus*), 77.
major tibetanus (Parus), 77.
major tibetanus (*Parus*), 78.
malabarica (*Chloropsis*), 348.
malabaricus (*Malacocercus*), 192.
malaccensis (*Hypsipetes*), 404.
malaccensis (*Iole*), 404.
malaccensis malaccensis (Iole), 404.
Malacocincla, 260.
malacoptilus (Rimator), 255.
malacoptilus (*Rimator*), 255.
malcolmi (Argya), 200.
malcolmi (*Argya*), 200.
malcolmi (*Timalia*), 200.
mandellii (*Pellorneum*), 240.
mandellii (*Schœniparus*), 284.
manipurensis (*Ægithaliscus*), 94.
manipurensis (*Certhia*), 437.
manipurensis (Fulvetta), 292.
manipurensis (*Proparus*), 292,
mariæ (*Pomatorhinus*), 215.
mearsi (*Pomatorhinus*), 207.
melanicterus (*Muscicapa*), 414.
melanicterus (Pycnonotus), 414.
melanicterus (*Pycnonotus*), 414.
melanocephala (Urocissa), 40.
melanocephala magnirostris (Urocissa), 42.
melanocephala melanocephala (Urocissa), 41.
melanocephala occipitalis (Urocissa), 41.
melanocephalus (*Coracius*), 41.
melanocephalus (*Lanius*), 423.
melanocephalus (*Micropus*), 423.
melanocephalus fuscillavescens (Microtarsus), 425.
melanocephalus melanocephalus (Microtarsus), 423.
Melanchlora, 101.
melanoleuca (*Lioptila*), 299.
melanoleuca (*Sibia*), 299.
melanoleuca melanoleuca (Leioptila), 299.
melanoleuca radcliffei (Leioptila), 300.
melanolophus (Lophophanes), 83.
melanolophus (*Lophophanes*), 83.
melanolophus (*Parus*), 83.
melanostigma (*Garrulax*), 167.
melanostigma (*Trochalopterum*), 167.
melanotis (*Pteruthius*), 333.
melanotis intermedius (Pteruthius), 335.
melanotis melanotis (Pteruthius), 333.
melanurus (*Potmatorhinus*), 212.
meridionale (*Trochalopteron*), 178.
merulina (*Stactocichla*), 186.
merulina merulina (Stactocichla), 186.
merulinus (*Garrulax*), 186.
Mesia, 353.
Microscelis, 368.
Microtarsus, 422.
milnei sharpei (Trochalopterum), 170.
Minla, 355.
minor (*Parus*), 78.
minus (*Pellorneum*), 242.
Mixornis, 272.
modestus (Sylviparus), 88.
modestus (*Sylviparus*), 88.
modestus modestus (Sylviparus), 88.
modestus saturatior (Sylviparus), 89.
modestus simlaensis (Sylviparus), 88.
modestus simlaensis (*Sylviparus*), 88.
Molpastes, 381.
monedula (*Corvus*), 36.
monedula scemmeringii (Corvus), 36.
moniliger (*Cinclosoma*), 151.
moniliger (*Garrulax*), 151.
moniliger fuscata (Garrulax), 152.
moniliger fuscata (*Garrulax*), 152.
moniliger moniliger (Garrulax), 151.
monticolus (*Parus*), 80.
monticolus monticolus (Parus), 80.
multipunctata (Nucifraga), 67.
multipunctata (*Nucifraga*), 67.
muraria (*Certhia*), 441.
muraria (Tichodroma), 441.
muraria (*Tichodroma*), 441.
Myzornis, 344.

nagaensis (*Sitta*), 127.
nasalis (Pyctorhis), 235.
neglecta (*Anothura*), 446.
neglecta (*Sitta*), 126.
neglectus (*Troglodytes*), 446.
Neosuthora, 115.
nepalensis (*Acanthophila*), 204.
nepalensis (*Alcippe*), 275.
nepalensis (*Ixops*), 307.
nepalensis (*Siva*), 275.
nepalensis (Suthora), 109.
nepalensis (*Suthora*), 109.
nepalensis fratercula (Alcippe), 277.
nepalensis nepalensis (Alcippe), 275.
neumayer tephronota (Sitta), 129.
nicobariensis (*Hypsipetes*), 408.
nicobariensis (Iole), 408.
nicobariensis (*Iole*), 408.
nigricapitata (*Brachypteryx*), 246.
nigricapitatum (Pellorneum), 246.
nigricapitatus (*Drymocataphus*), 246.
nigriceps (*Stachyris*), 264.
nigriceps coltarti (Stachyris), 265.

nigriceps coltarti (*Stachyris*), 265.
nigriceps davisoni (Stachyris), 265.
nigriceps nigriceps (Stachyris), 264.
nigrifrons (Alcippe), 282.
nigrifrons (*Rhopocichla*), 282.
nigrimentum (*Polyodon*), 320.
nigrimentum (*Trochalopterum*), 164.
nigrimentum (*Yuhina*), 320.
nigrimentum nigrimentum (Yuhina), 320.
nigripileus (*Molpastes*), 386.
nigripileus (*Pycnonotus*), 386.
nigrolutea (Ægithina), 344.
nigrolutea (*Ægithina*), 344.
nigrolutea (*Iora*), 344.
nipalensis (Acanthoptila), 204.
nipalensis (*Anothura*), 445.
nipalensis (*Certhia*), 433.
nipalensis (*Cinclosoma*), 307.
nipalensis (*Cutia*), 329.
nipalensis (Ixops), 307.
nipalensis (*Timalia*), 204.
nipalensis (*Troglodytes*), 445.
nipalensis daflaensis (Ixops), 309.
nipalensis nipalensis (Cutia), 329.
nipalensis nipalensis (Ixops), 307.
nipalensis poliotis (Ixops), 309.
nipalensis waldeni (Ixops), 308.
niveogularis (Ægithaliscus), 98.
niveogularis (*Ægithaliscus*), 98.
niveogularis (*Orites*), 98.
nuchalis (Dryonastes), 140.
nuchalis (*Dryonastes*), 140.
nuchalis (*Garrulax*), 140.
nuchalis (Parus), 79.
nuchalis (*Parus*), 79.
nuchalis (Pomatorhinus), 208.
nuchalis (*Pomatorhinus*), 208.
Nucifraga, 65.

oatesi (*Garrulus*), 62.
oatesi (*Urochichla*), 455.
obscurus (*Pomatorhinus*), 211.
occipitalis (Ixulus), 321.
occipitalis (*Ixulus*), 321.
occipitalis (*Psilorhinus*), 41.
occipitalis (*Siva*), 321.
occipitalis (*Urocissa*), 41, 42.
occipitalis (*Yuhina*), 319.
occipitalis occipitalis (Yuhina), 319.
ocellata (*Ianthocincla*), 155.
ocellata ocellata (Ianthocincla), 155.
ocellatum (*Cinclosoma*), 155.
ochraceiceps (Pomatorhinus), 217.
ochraceiceps (*Pomatorhinus*), 217.
ochraceiceps austeni (Pomatorhinus), 218.
ochraceiceps ochraceiceps (Pomatorhinus), 217.
ochraceiceps stenorhynchus (Pomatorhinus), 219.
ochrocephalus (Trachycomus), 402.
ochrocephalus (*Trachycomus*), 402.
ochrocephalus (*Turdus*), 402.
oglei (*Actinura*), 262.
oglei (Thringorhina), 262.
oglei (*Thringorhina*), 262.
olivacea (Iole), 406.
olivacea cinnamomeoventris (Iole), 407.
olivacea lönnbergi (Iole), 408.
olivacea virescens (Iola), 406.
olivaceus (Pomatorhinus), 209.
olivaceus (*Pomatorhinus*), 209.
olivaceus olivaceus (Pomatorhinus), 209.
olivaceus ripponi (Pomatorhinus), 210.
orientalis (*Corvus*), 24.
ornata (Cissa), 46.
ornata (*Cissa*), 46.
ornata (*Pica*), 46.
Otocompsa, 394.

pallida grandis (*Criniger*), 365.
palustre (Pellorneum), 242.
palustre (*Pellorneum*), 242.
palustris (Parus), 82.
palustris korejewi (Parus), 82.
palustris pœcilopsis (Parus), 82.
Paradoxornis, 105.
PARADOXORNITHIDÆ, 103.
PARIDÆ, 72.
Parus, 73.
Passeres, 10.
pectoralis (*Garrulax*), 150.
pectoralis (*Ianthocincla*), 150.
pectoralis pectoralis (Garrulax), 150.
pectoralis semitorquata (Garrulax), 151.
Pellorneum, 237.
penicillata (Kelaartia), 426.
penicillata (*Kelaartia*), 426.
penicillatus (*Pycnonotus*), 426.
phæocephala (*Alcippe*), 277.
phæocephala davisoni (*Alcippe*), 279.
phæocephala haringtoniæ (*Alcippe*), 280.
phæocephalus (Alophoixus), 368.
phæocephalus (*Alophoixus*), 368.
phæocephalus (*Ixos*), 368.
phæocephalus (*Micropus*), 425.
phayrei (*Alcippe*), 278.
phayrei (*Pomatorhinus*), 214.
phœnicea (*Ianthocincla*), 168.
phœniceum (Trochalopterum), 168.
phœniceum (*Trochalopterum*), 168.
phœniceum bakeri (Trochalopterum), 169.
phœniceum bakeri (*Trochalopteron*), 169.

phœniceum phœniceum (Trochalopterum), 168.
phœniceum ripponi (Trochalopterum), 170.
Pica, 37.
pica (Pica), 38.
pica bactriana (Pica), 38.
pica bottanensis (Pica), 39.
pica serica (Pica), 39.
picaoides (*Sibia*), 295.
picaoides picaoides (Sibia), 295.
pileata (*Prinia*), 274.
pileata (Timalia), 225.
pileata (*Timelia*), 226.
pileata bengalensis (Timalia), 226.
pileata jerdoni (Timalia), 227.
Pinarocichla, 399.
pinwilli (*Pomatorhinus*), 208.
Platysmurus, 58.
plumosus (Pycnonotus), 418.
plumosus (*Pyncnonotus*), 419.
plumosus blandfordi (Pycnonotus), 420.
plumosus plumosus (Pycnonotus), 419.
plumosus robinsoni (Pycnonotus), 420.
Pnoepyga, 457.
Podoces, 71.
pœcilopsis (*Lophophanes*), 82.
poiocephalus (*Brachypus*), 425.
poiocephalus (Microtarsus), 425.
poioicephala (*Thimalia*), 277.
poioicephala brucei (Alcippe), 278.
poioicephala davisoni (Alcippe), 280.
poioicephala haringtoniæ (Alcippe), 280.
poioicephala magnirostris (Alcippe), 280
poioicephala phayrei (Alcippe), 278.
poioicephala poioicephala (Alcippe), 277.
poliotis (*Ixops*), 309.
poliotis (*Suthora*), 109.
poliotis feæ (Suthora), 111.
poliotis humii (Suthora), 110.
poliotis poliotis (Suthora), 109.
pollotis ripponi (Suthora), 111.
Pomatorhinus, 205.
psaroides (*Hypsipetes*), 369.
psaroides (Microscelis), 369.
psaroides concolor (Microscelis), 372.
psaroides ganeesa (Microscelis), 372.
psaroides nigrescens (Microscelis), 371.
psaroides nigrescens (*Hypsipetes*), 371.
psaroides psaroides (Microscelis), 369.
Pseudominla, 286.
Psittiparus, 116.
Pteruthius, 330.
pulchella (*Lioptila*), 302.
pulchella (*Sibia*), 302.
pulchella pulchella (Leioptila), 302.
pulchellus (*Ægithaliscus*), 95.
punctata (*Elachura*), 449.
pusilla (Pnoepyga), 459.
pusilla (*Pnoepyga*), 459.
pusilla pusilla (Pnoepyga), 459.
pusillus (*Pycnonotus*), 422.
Pycnonotidæ, 359.
Pycnonotus, 410.
Pyctorhis, 233.
Pyrrhocorax, 68.
pyrrhocorax (Pyrrhocorax), 68.
pyrrhocorax (*Upupa*), 68.
pyrrhops (Stachyridopsis), 271.
pyrrhops (*Stachyridopsis*), 271.
pyrrhops (*Stachyris*), 271.
pyrrhoura (Myzornis), 345.
pyrrhoura (*Myzornis*), 345.

ramsayi (*Actinodura*), 305.
ramsayi (*Trochalopterum*), 168.
ramsayi radcliffei (Actinodura), 306.
ramsayi radcliffei (*Actinodura*), 306.
ramsayi ramsayi (Actinodura), 305.
Remiz, 100.
reptata (*Urocichla*), 455.
Rhopocichla, 281.
Rimator, 255.
ripponi (*Actinodura*), 305.
ripponi (*Pomatorhinus*), 210.
ripponi (*Proparus*), 291.
ripponi (*Suthora*), 111.
ripponi (*Trochalopterum*), 170.
roberti (*Pnoepyga*), 253.
roberti (Sphenocichla), 461.
roberti (*Sphenocichla*), 461.
roberti guttaticollis (Turdinulus), 254.
roberti roberti (Turdinulus), 253.
robinsoni (*Pycnonotus*), 420.
rostrata (Æthostoma), 259.
rostrata (*Trichostoma*), 259.
rubidiventris (Lophophanes), 84.
rubidiventris (*Lophophanes*), 84.
rubidiventris (*Parus*), 84.
Rubigula, 409.
rubricapilla (Mixornis), 272.
rubricapilla (*Motacilla*), 273.
rubricapilla minor (Mixornis), 274.
rubricapilla pileata (Mixornis), 274.
rubricapilla rubricapilla (Mixornis), 273.
rufa (Dendrocitta), 48.
rufa (*Dendrocitta*), 48.
rufa kinneari (Dendrocitta), 51.
rufa rufa (Dendrocitta), 48.
rufa saturatior (Dendrocitta), 51.
rufa sclateri (Dendrocitta), 50.

rufa vagabunda (Dendrocitta), 50.
rufescens (*Crateropus*), 195.
rufescens (*Malacocercus*), 195.
rufescens (Turdoides), 195.
ruficapilla (*Mixornis*), 273.
ruficapilla sordidior (Fulvetta), 292.
ruficeps (*Chleuasicus*), 114.
ruficeps (*Paradoxornis*), 116.
ruficeps (*Pellorneum*), 238.
ruficeps (*Scæorhynchus*), 116.
ruficeps (*Stachyridopsis*), 268.
ruficeps (*Suthora*), 114.
ruficeps atrosuperciliaris (Suthora), 114.
ruficeps bakeri (Psittiparus), 117.
ruficeps bakeri (*Scæorhynchus*), 117.
ruficeps bhamoensis (*Stachyridopsis*), 269.
ruficeps bhamoensis (*Stachyridopsis*), 269.
ruficeps granti (Pellorneum), 240.
ruficeps granti (*Pellorneum*), 240.
ruficeps jonesi (Pellorneum), 241.
ruficeps jonesi (*Pellorneum*), 241.
ruficeps mandellii (Pellorneum), 240.
ruficeps minus (Pellorneum), 242
ruficeps ruficeps (Pellorneum), 238.
ruficeps ruficeps (Psittiparus), 116.
ruficeps ruficeps (Stachyridopsis), 268.
ruficeps ruficeps (Suthora), 114.
ruficeps subochraceum (Pellorneum), 239.
ruficeps var. *atrosuperciliaris* (*Chleuasicus*), 114.
ruficollis (*Corvus*), 23.
ruficollis (Dryonastes), 139.
ruficollis (*Dryonastes*), 139.
ruficollis (*Ianthocincla*), 139.
ruficollis (Pomatorhinus), 216.
ruficollis (*Pomatorhinus*), 216.
ruficollis bakeri (Pomatorhinus), 217.
ruficollis bakeri (*Pomatorhinus*), 217.
ruficollis ruficollis (Pomatorhinus), 216.
rufifrons (*Stachyridopsis*), 269.
rufifrons (*Stachyris*), 269.
rufifrons ambigua (Stachyridopsis), 270.
rufifrons ambigua (*Stachyridopsis*), 270.
rufifrons rufifrons (Stachyridopsis), 269.
rufigens (*Ixulus*), 311.
rufigenis (*Staphidia*), 311.
rufigularis (*Minla*), 286
rufigularis (Schœniparus), 286.
rufigularis (*Schœniparus*), 286.
rufiventer (Hilarocichla), 337.
rufiventer (*Pteruthius*), 397.
rufiventris (*Hilarocichla*), 337.
rufogularis (*Ianthocincla*), 158.
rufogularis assamensis (Ianthocincla), 159.
rufogularis assamensis (*Ianthocincla*), 159.
rufogularis occidentalis (Ianthocincla), 159.
rufogularis occidentalis (*Ianthocincla*), 159.
rufogularis rufogularis (Ianthocincla), 158.
rufonuchalis (Lophohanes), 85.
rufonuchalis (*Lophophanes*), 85.
rufonuchalis beavani (Lophophanes), 86.
rufonuchalis rufonuchalis (Lophophanes), 85.
rufonuchas (*Parus*), 85.
rufulus (Gampsorhynchus), 231.
rufulus (*Gampsorhynchus*), 231.
rufulus rufulus (Gampsorhynchus), 231.
rufulus torquatus (Gampsorhynchus), 232.
rufus (*Corvus*), 48.
rustica (*Pica*), 38.

Salpornis, 439.
sannio (Dryonastes), 144.
sannio (*Dryonastes*), 144.
sannio (*Garrulax*), 144.
saturata (*Lioptila*), 301.
saturatior (*Sylviparus*), 89.
schisticeps (Pomatorhinus), 205.
schisticeps (*Pomatorhinus*), 206.
schisticeps cryptanthus (Pomatorhinus), 207.
schisticeps cryptanthus (*Pomatorhinus*), 207.
schisticeps mearsi (Pomatorhinus), 207.
schisticeps pinwilli (Pomatorhinus), 208.
schisticeps schisticeps (Pomatorhinus, 206.
Schœniparus, 283.
semitorquata (*Garrulax*), 151.
sepiaria abbotti (Malacocincla), 260.
serica (*Pica*), 39.
sharpei (*Ægithaliscus*), 97.
sharpei (*Trochalopterum*), 170.
sharpii (*Corvus*), 32.
Sibia, 295.
Sibiinæ, 294.
simile (*Trochalopteron*), 174.
simplex (*Pycnonotus*), 421.
simplex simplex (Pycnonotus), 421.
sinensis (Dendrocitta), 52.
sinensis (*Parus*), 233.
sinensis (*Pyctorhis*), 233.

sinensis assimilis (Dendrocitta), 53.
sinensis himalayensis (Dendrocitta), 52.
sinensis nasalis (Pyctorhis), 235.
sinensis saturatior (Pyctorhis), 234.
sinensis saturatior (*Pyctorhis*), 234.
sinensis sinensis (Pyctorhis), 233.
sintumensis (*Urocichla*), 453.
Sitta, 121.
Sittidæ, 120.
Siva, 312.
sœmmeringii (*Corvus*), 36.
somervillei (*Timalia*), 194.
somervillei (Turdoides), 194.
somervillii (Crateropus), 194.
sordida (*Siva*), 316.
sordidior (*Proparus*), 292.
Spelæornis, 451.
Sphenocichla, 460.
spilonota (*Certhia*), 439.
spilonota (*Salpornis*), 439.
spilonotus (*Machlolophus*), 89.
spilonotus (*Parus*), 89.
spilonotus (Salpornis), 439.
spilonotus spilonotus (Machlolophus), 89.
spilonotus subviridis (Machlolophus), 91.
Spizixus, 400.
splendens (Corvus), 32.
splendens (*Corvus*), 33, 34, 35.
splendens insolens (Corvus), 34.
splendens protegatus (Corvus), 35.
splendens protegatus (*Corvus*), 35.
splendens splendens (Corvus), 33.
splendens zugmayeri (Corvus), 34.
squamata (*Ianthocincla*), 174.
squamata (*Microura*), 458.
squamata (*Pnoepyga*), 458.
squamata squamata (Pnoepyga), 458.
squamata webberi (Rubigula), 409.
squamatum (Trochalopterum), 174.
squamatum (*Trochalopterum*), 174.
Stachyridopsis, 267.
Stachyris, 263.
Stactocichla, 186.
Staphidia, 309.
stenorhynchus (*Pomatorhinus*), 219.
stoliczkæ (Certhia), 438.
stoliczkæ (*Certhia*), 438.
strepitans (Garrulax), 154.
strepitans (*Garrulax*), 154.
striata (*Corythocichla*), 251.
striata (Grammatoptila), 184.
striata (*Grammatoptila*), 184.
striata (*Ixulus*), 311.
striata (*Staphidia*), 311.
striata austeni (Grammatoptila), 185.
striata rufigenis (Staphidia), 311.
striata striata (Grammatoptila), 184.
striata striata (Staphidia), 311.
striatus (Alcurus), 379.
striatus (*Alcurus*), 379.
striatus (*Garrulax*), 184.
striatus (*Malacocercus*), 194.
striatus (*Trichophorus*), 379.
striatus (*Turdinus*), 251.
strigula (*Siva*), 313.
strigula castaneicauda (Siva), 314.
strigula strigula (Siva), 313.
styani (*Trochalopterum*), 157.
subcærulatus (*Dryonastes*), 142.
subcærulatus (*Garrulax*), 142.
subochraceum (*Pellorneum*), 239.
subrufa (Argya), 201.
subrufa (*Argya*), 201.
subrufa (*Timalia*), 201.
subunicolor (*Trochalopterum*), 171.
subunicolor subunicolor (Trochalopterum), 171.
subviridis (*Parus*), 91.
sultanea (Melanochlora), 101.
sultanea (*Melanochlora*), 101.
sultanea flavocristata (Melanochlora), 102.
sultanea sultanea (Melanochlora), 101.
sultaneus (*Parus*), 101.
superciliaris (Xiphiramphus), 224.
superciliaris (*Xiphiramphus*), 224.
Suthora, 107.
Sylviparus, 88.

tæniura (*Certhia*), 431.
talifuensis (*Troglodytes*), 446.
talifuensis (*Ægithaliscus*), 95.
tephrogenys (*Trichophorus*), 362.
tephrogenys burmanicus (Criniger), 364.
tephrogenys flaveolus (Criniger), 363.
tephrogenys grandis (Criniger), 365.
tephrogenys griseiceps (Criniger), 365.
tephrogenys tephrogenys (Criniger), 362.
tephronota (*Sitta*), 129.
terricolor (*Pastor*), 191.
terricolor malabaricus (Turdoides), 192.
terricolor sindianus (Turdoides), 193.
terricolor sindianus (*Turdoides*), 193.
terricolor terricolor (Turdoides), 191.
Tesia, 462.
thompsoni (Cerasophila), 373.
thompsoni (*Cerasophila*), 373.
thompsoni (*Suthora*), 115.
Thringorhina, 261.
tibetana (*Anothura*), 448.
tibetanus (*Corvus*), 23.
Tichodroma, 441.
tickelli (*Drymocataphus*), 247.
tickelli (*Hemixus*), 378.

tickelli (*Hypsipetes*), 378.
tickelli (*Pellorneum*), 247.
tickelli (*Pomatorhinus*), 223.
tickelli assamensis (Pellorneum), 248.
tickelli tickelli (Pellorneum), 247.
Timalia, 225.
TIMALIIDÆ, 134.
TIMALIINÆ, 136.
tiphia (Ægithina), 339.
tiphia (*Ægithina*), 340.
tiphia (*Motacilla*), 340.
tiphia humei (Ægithina), 342.
tiphia tiphia (Ægithina), 340.
tiphia zeylonica (Ægithina), 342.
torquatus (*Gampsorhynchus*), 232.
Trachycomus, 402.
Tricholestes, 366.
Trochalopterum, 161.
Troglodytes, 444.
troglodytes (Troglodytes), 445.
troglodytes neglectus (Troglodytes), 446.
troglodytes nepalensis (Troglodytes), 445.
troglodytes talifuensis (Troglodytes), 446.
troglodytes tibetanus (Troglodytes), 448.
TROGLODYTIDÆ, 444.
Turdinulus, 250.
Turdoides, 190.

umbrinus (*Corvus*), 23.
unicolor (*Heteromorpha*), 108.
unicolor (Suthora), 108.
unicolor (*Suthora*), 108.
Urocissa, 40.

vagabunda (*Coracias*), 50.
vagabunda saturatior (*Dendrocitta*), 51.
varians (*Corvus*), 56.
varians (Crypsirhina), 56.
variegatum (*Cinclosoma*), 173.
variegatum (Trochalopterum), 173.
variegatum (*Trochalopterum*), 173.
variegatum simile (Trochalopterum), 174.
variegatum variegatum (Trochalopterum), 173.
victoriæ (*Babax*), 188.
victoriæ (*Certhia*), 437.
victoriæ (*Ianthocincla*), 161.
victoriæ (Sitta), 123.
victoriæ (*Sitta*), 123.
vinipecta austeni (Fulvetta), 291.
vinipecta ripponi (Fulvetta), 291.
vinipecta vinipecta (Fulvetta), 290.
vinipectus (*Proparus*), 290.
vinipectus (*Siva*), 290.
virgatum (*Trochalopteron*), 179.
virgatum (Trochalopterum), 179.
viridis zosterops (Chloropsis), 351.
viridissima (Ægithina), 343.
viridissima (*Ægithina*), 343.
viridissima (*Iora*), 343.
virescens cinnamomeoventris (*Iole*), 407.
virescens (*Iole*), 406.

waddelli (Babax), 189.
waddelli (*Babax*), 189.
waldeni (*Actinodura*), 308.
waldeni (*Ixops*), 308.
webbiana brunnea (Suthora), 112.
webberi (*Ixidia*), 409.
wingatei (*Siva*), 315.

Xanthixus, 392.
xanthochloris (*Pteruthius*), 335.
xanthochloris occidentalis (Pteruthius), 336.
xanthochloris occidentalis (*Pteruthius*), 336.
xanthochloris xanthochloris (Pteruthius), 335.
xanthogenys (*Machlolophus*), 91.
xanthogenys (*Parus*), 91.
xanthogenys aplonotus (Machlolophus), 92.
xanthogenys xanthogenys (Machlolophus), 91.
xantholæmus (*Brachypus*), 415.
xantholæmus (Pycnonotus), 415.
xantholæmus (*Pycnonotus*), 415.
xantholeuca (*Erpornis*), 325.
xantholeuca (*Herpornis*), 325.
xantholeuca xantholeuca (Erpornis), 325.
xanthorrhous (*Pycnonotus*), 411.
Xiphiramphus, 224.

yangpiensis (*Yuhina*), 318.
Yuhina, 316.
yunnanensis (*Certhia*), 432.

zeylonica (*Motacilla*), 342.
zosterops (*Chloropsis*), 351.
zugmayeri (Corvus), 34.

PRINTED BY TAYLOR AND FRANCIS,
RED LION COURT, FLEET STREET.